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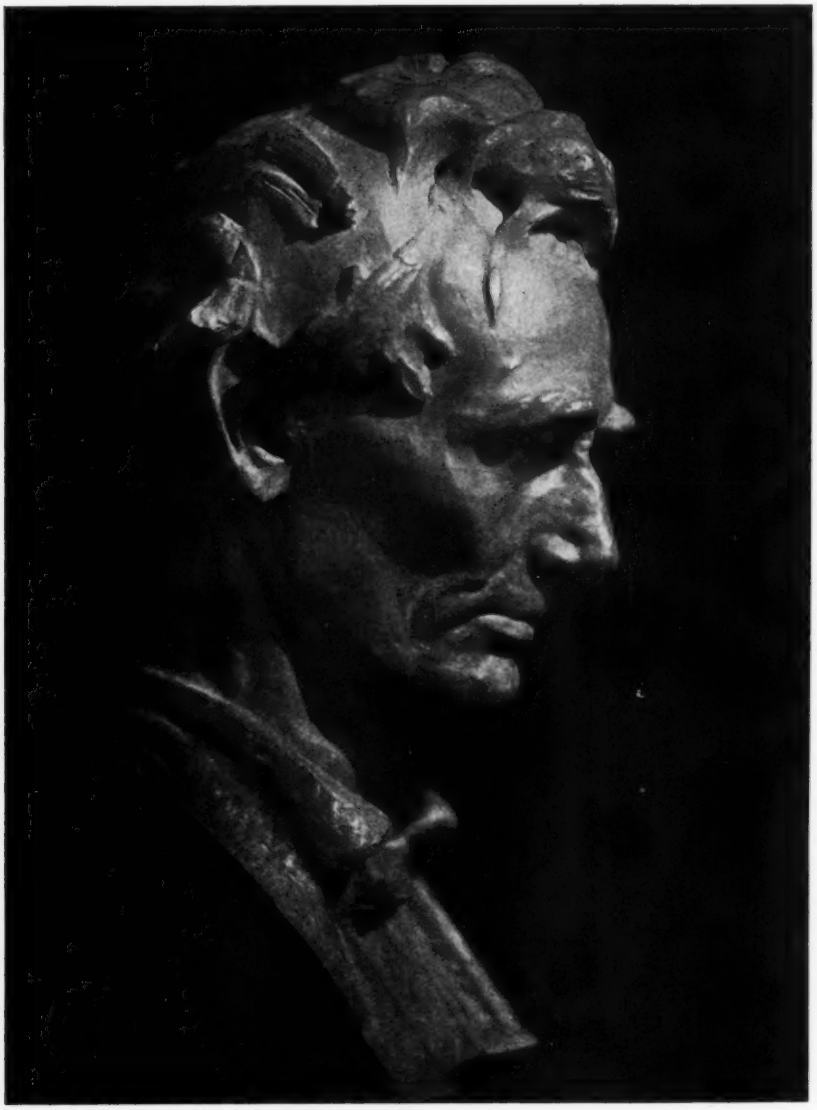

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ABRAHAM LINCOLN
ANDREW O'CONNOR, SC.
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PHOTO-ERA

The American Journal of Photography

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Photographing the Forests

FRANK A. WAUGH

THE National Forests contain some of the grandest scenery in America; everybody knows that. So when I got my assignment to spend the summer of 1917 on an inspection of the Forests I approached the task with great joy. And, of course, one of the first matters to be considered was that of photography. Having been an amateur-photographer for years, and particularly in love with the out-of-doors, I could not think of going by all those magnificent forest-landscapes without the equipment for indulging my photographic taste to the utmost.

As this was to be a rapid trip covering over 20,000 miles, it was necessary to carry a light equipment. Thus the camera-problem was the same as that which confronts the average tourist; and the average tourist's solution was mine, viz. the 3A F.P.K.; for all of us old soldiers know that for landscape and the general tourist's work, nothing else offers compensating advantages.

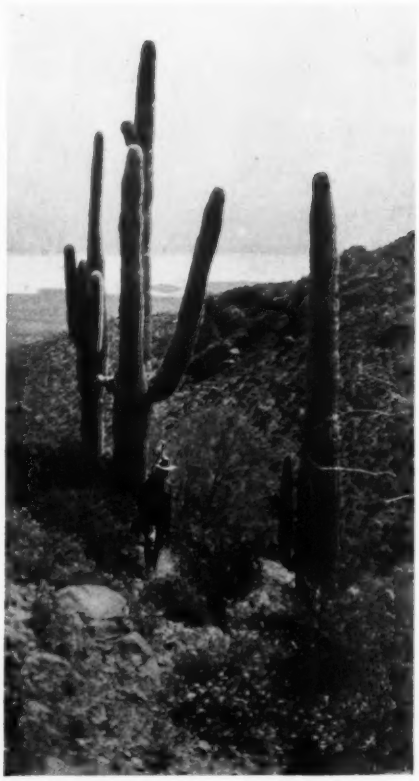
To be sure, I would have preferred to carry my Folmer and Schwing 5 x 7 plate-camera with tripod. This is an equipment which I can guarantee under all conditions. I should have liked to carry an entire battery of lenses which I keep in stock on interchangeable lense-boards. I should have been glad, indeed, to carry the 4 x 5 folding Zeiss-Palmos with its focal-plane shutter, but in view of the long trips by automobile, by pack-train, on horseback and on foot, the regulation tourist's outfit was obviously to be preferred. This was fitted with the regular Kodak anastigmat F/7.7 and with no other fancy equipment. I did not even carry a tripod, though from time to time I did borrow one, or improvised a camera-stand out of soap-boxes and the like. If I were going the same trip over again I should carry a small tripod, and this would enable me to use also a color-screen. The color-screen would be advantageous to get some of the fine cloud-effects which are exceedingly important in this branch of landscape-photography.

ASPENS, ARIZONA FRANK A. WAUGH

My journey took me through all the Rocky Mountain and Pacific Coast states and through several of those on the eastern seaboard; but everywhere I found the practical forest-men using some kind of the same F.P.K. Most of these men were frankly snap-shooters;

a few were genuine amateurs, in the proper sense of that term—lovers of the sport. One man whom I met was a real fan. He carried a 5 x 7 plate-camera and tripod on his own back all over the high Sierras; and it hardly needs to be added that he brought home the pictures. Such an enthusiast was virtually certain to produce technical excellence and artistic feeling.

Much has been written about the difficulties of light in the high altitudes of the west. Although the time was mid-summer, I experienced none of the promised troubles. I did no photographing above 10,000 feet; but up to that altitude everything worked beautifully, and I also made several exposures at sea-level. In the southern Sierras of California I got rich and ruddy gradations with full rounded values such as one expects only when photographing in England. This was a great surprise to me, as I have had serious difficulty in times past, especially in Colorado and on the central plains. Of course, in using a hand-camera without a tripod, short exposures were the rule and very essential. Strangely enough, the only instances of over-

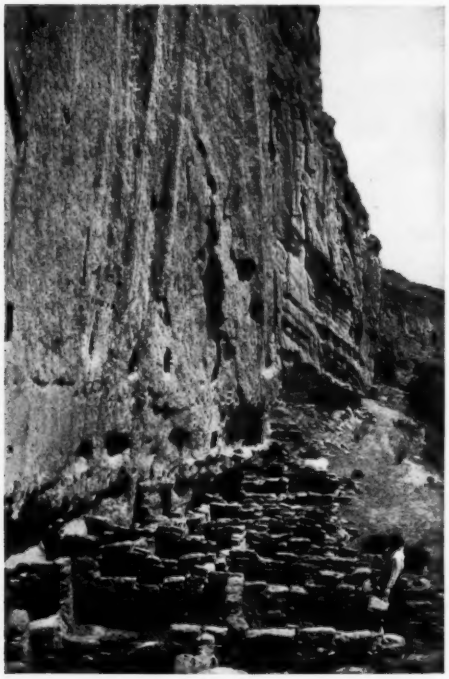


LUGUARO FRANK A. WAUGH

exposure on my trip were some photographs made in Washington, D.C.

In general, I went on the supposition that an overexposure is impossible when making a snap shot. I used the largest aperture—virtually F/8—most of the time, and the shutter was kept set pretty steadily at 1/10 second. Occasionally, when working under almost tropical conditions at midday, the shutter was speeded up to avoid overexposure, as in the case of the picture of a Luguaro or Giant Cactus which was exposed in a scorching hot sun, in southern Arizona with Roosevelt Lake in the distance.

My previous experience had made me wary of a dry atmosphere. My theory is that moisture in the atmosphere gives a greater diffusion of light and, therefore, a better aerial perspective and a better roundness to objects. However, my fears were not realized on this trip. Take, for instance, the picture of the Old Cliff-Dwellings made in Bandelier National Monument, Santa Fé Forest, about thirty-five miles from Santa Fé,



OLD CLIFF-DWELLINGS FRANK A. WAUGH

in a burning noonday sun, in August. Exposure was reduced to 1/25 second; but no other precautions, whatever, were taken. It will be seen that the exposure is well balanced, and that the gradations are perfect.

Or, take the picture of the little 'dobe Mexican Village as another example. This photograph was made in the middle of August on the open New Mexico desert. The precaution, here, was to get the photograph just after sunrise. This was desirable, not merely on account of the softer light, but because the longer shadows assist very greatly with this kind of architecture. The picture of the aspens was made on the San Francisco mountains near Flagstaff, Arizona, at an elevation of about 10,000 feet. Considering the whiteness of the tree-trunks and twigs, and the brightness of the sky, the problem was a difficult one photographically. The situation was helped, somewhat, by the lateness of the hour—about four o'clock p.m.; but the result was reached by giving a full exposure, which renders the soft white of the bark without the harsh contrast of an underexposed negative.

MEXICAN VILLAGE, NEW MEXICO — FRANK A. WAUGH

The National Forests contain millions of acres of scenery on a vast scale. Much of this country is wild and inaccessible, in the extreme. Yet there are also vast areas of this national domain which can be reached almost as easily as Niagara Falls. Much good country can be touched directly by railroad, and the automobile opens up thousands of miles more. The Forest-Service has been cooperating extensively with the local county and state-authorities in building roads, so in most parts of the country it is fairly safe to promise a man that he can go as far as he likes. Of course, there are still thousands of miles of the higher mountains and of the best scenery which can be worked only by pack train or by going in on foot. Looking at the matter merely as a photographic enterprise, one may safely say that he has his choice of conveyance. If he has the time and wants to get out of the beaten path, he cannot do better than to apply to some forest supervisor or local ranger who will tell him where to hire a horse and a pack-outfit and will put him on the trail. Indeed, there are many professional photographers who cover all this territory with every kind of outfit, including elaborate equipment for color-photography, motion-picture machines and all that. Beyond the automobile-roads, the Forest-Service has built thousands and thousands of miles of trail used by the forest-rangers in patroling the territory guarding against fires and trespassers. Some of these trails are much more comfortable going than State Street, Chicago, at noonday; others of them are steep and rough enough to appeal to anybody's sporting-blood.

Of course, when anyone gets back into the Big Woods, it is necessary for him to be at his own resources. At the point of departure he can always buy films and nearly always plates. He can virtually always get the sympathetic assistance of a local photographer for use of dark-room, camera-repairs or any other legitimate help. If he takes to the real pack-trail, he will naturally prefer a film-camera, for this is a tent-

OLD YELLOW PINE FRANK A. WAUGH

ing-proposition, when, indeed, it is not a case of sleeping out of doors altogether.

As soon as one comes back to his base of operations, either at the Forest-Service station or the city, he has available the usual commercial facilities for the development of his plates or films. This development and printing-service is now so nearly universal and so uniformly good, that one need not worry about it at all. I bought films all over the country, this year, and had rolls developed in a dozen different parts of the country from Amherst, Massachusetts, to San Francisco, California, and I take some satisfaction in reporting that not a single film was spoiled or injured in the entire lot.

At many of the Forest-Service ranger stations, and at virtually all of the supervisors' offices, a full photographic equipment is kept and a dark-room is nearly always available. These officers can always be relied on for their help and sympathy whenever a traveler may apply to them for photographic or other assistance.

Possibly some photographers who read these lines may be planning a vacation in the West and may care to know about some of the particularly fine places in the national forests, all of which are open to visitors, as a matter of course. Lake Chelan, in central Washington, is certainly one of the most superb landscapes in the world and is unsurpassed as a vacation-country. The Cleveland forest, east of San Diego, has a striking combination of accessibility and unspoiled wildness. The White Mountains of Arizona are an unmitigated joy. Or if one fancies Indians, pueblos or archaeological subjects, let him go at once to the Forests, National Parks and National Monuments of New Mexico and Arizona. And speaking of National Forests, no one need forget that some of the most thoroughly beautiful are situated in New Hampshire, Virginia and North Carolina.

The Olympic Forest, westward from Seattle, Washington, is notable for its splendid timber. The Oregon Forest, eastward from Portland, including the Mt. Hood region, is one of the finest pieces of landscape to be found anywhere. In Idaho, particularly, good scenery may be found in the Couer d'Alene, Selway and Sawtooth forests. In Montana, one should visit the Flathead, Lewis and Clark and Beaverhead forests. In Wyoming, the Shoshone and Teton offer unusual facilities to vacationers. In Colorado, it is almost impossible to go wrong. Nearly the whole main range of the Rocky Mountains is included in the National Forest domain.

Some of the best scenery of all, however, is to be found in New Mexico and Arizona. The territory about Santa Fé is very accessible and very interesting. The country in the neighborhood of Flagstaff, Arizona, is I believe destined to be a national summer-resort of considerable importance, largely on account of its fine summer-climate and the remarkable scenery in that

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vicinity. Moreover, it must not be forgotten that this is the neighborhood of the Grand Canyon, one of the greatest landscape-wonders of the world. On the north side of the Canyon (much less known than the south side) lies the Kaibab National Forest, a wild and wonderful territory.

California, also, has its splendid National Forests as well as its beautiful National Parks. These include virtually the entire upper range of the Sierras and offer a combination of forest, stream and mountains not to be surpassed anywhere in the wide world.

It will be seen, I hope, that the photographer who goes West must not fail to visit the National Forests and Parks. As soon as he approaches the Rocky Mountains, he has at his command an unlimited range of territory, incomparable scenery of many kinds, every reasonable facility for travel and work. If he only does his part, he is sure to come home with a portfolio filled with fine photographs and delightful memories.

Where Dryplates Come From

A. T. STRONG

"OH! that's easy!" you will say upon reading the above title; "dryplates come out of cardboard-boxes, and the boxes come from our dealer, who in turn gets them from Eastman's or Cramer's or Lumière's, or from some other plate-manufacturer."

Well, so they do—the finished plates—but how about the glass-support upon which the photographic part of the plate is coated—where does that originate? Do you know that the big dryplate-makers only *coat* the plate, and that the glass-support is made in a different factory, and by men who for the most part would not know a finished dryplate if they were to see one. And, furthermore, are you aware that dryplate-supports when first made, are usually known by another and entirely different name—a name in no way associated with photography? Well, such are the facts. Dryplates are nothing more or less than an extra-fine grade of window-glass, and are made frequently—though not always—in the same factory, at the same time and even from the same sheet of glass.

Window-glass — or dryplate-glass — was formerly all made by hand, that is, without the aid of any mechanical device; but of late years the progress which machinery has made has brought machine-methods into the glass-making field, and now we have both hand- and machine-made dryplates. As to which is the better for photographic purposes, it would be difficult to determine. But for that matter, both answer the purpose sufficiently well provided that the glass is inspected rigidly for defects and comes up to the standard required for dryplates.

Window-glass—and incidently dryplate-glass—was produced in England, France, Italy, Belgium, Canada, the United States and, of late, Japan. But of all these countries, France and Belgium alone made sufficient window-glass to export to the United States. And especially was this true of dryplates, as France and Belgium furnished the plate-manufacturers with their dryplate-glass for many years. We all remember the familiar statement on dryplate-boxes: "Coated upon the finest grade of French glass, etc." While, at the same time, the glass-factories of our own country were turning out carloads of excellent window-glass, which, with a slightly different method of blowing and a more rigid system of inspection, might have become dryplates.

Whether this was through ignorance or carelessness on the part of the American window-glass manufacturers, or because the French-made dryplate-glass was—as the plate-makers asserted—of superior quality, I do not know; but I do know that the Great War has upset the latter theory. France and Belgium, with their countries invaded and devastated by the German armies, no longer are making dryplates for export to the United States. Consequently, American plate-manufacturers are now largely if not wholly dependent upon glass made beneath the Stars and Stripes. To what degree the American glass-manufacturer has met the problem, may be judged by the fact that one of the largest window-glass companies of the United States has reserved a department in one of its factories for the making of dryplates only. And you and I, who must needs "shoot" these plates, can truthfully say that our results are fully equal to those obtained in the past with the foreign-made product. And we experience a little thrill of patriotism when we say it, too!

According to the history of glass, some ancients once stopped to cook their noon-day luncheon on the sands of the ocean-beach. Of just what the luncheon consisted, or in what manner it was prepared, history does not tell us; but

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some particularly tough viands were evidently on the menu which necessitated building an intensely hot fire. At any rate, at the conclusion of the meal the diners were amazed to see that the sand immediately around and underneath their fire had apparently melted, and in so doing had formed a new substance of a transparent nature. The silica in the sand—so the tale runs—in combination with certain chemicals liberated by the burned seaweed, which furnished fuel for the fire, and all subjected to the heat, formed glass.

But the modern glass-maker cannot afford to make his wares in such a haphazard manner. Like every other important industry, glass-making has been systematized and perfected until it is no longer a question of chance or guesswork. First, comes the melting of the raw materials. This is done usually by means of a brick and fire-clay "tank" roughly one hundred feet in length, twenty-five feet wide and twelve to fifteen high, or deep, as this dimension ordinarily is known. Into one end of this huge receptacle are conveyed—usually by means of man and wheelbarrow-power—literally, tons of raw materials. The components of glass vary considerably, and each manufacturer has his own private formula, so nothing definite can be said on this subject. However, the basis of all glass—particularly dryplate-glass—is sand (ground from sandstone-rock, which is rich in silica), to which is added lime, soda-ash, carbon and a large percentage of "cullet," which is glass that has already been melted from the raw materials.

When the tank—it is roofed over to retain the heat—is about half filled, the end through which the raw stock has been conveyed is walled up, fires beneath it are lighted and the mass subjected to intense heat for a number of days. Gradually the materials melt, fuse together and slowly flow to the "nose" or working-end of the tank. At the same time, and continually afterwards as long as glass is being used from the tank, more raw stock is at short intervals filled in to keep the supply of melted glass up to a certain quantity.

The first step in the actual making of the glass is the blowing; and this is done at, or near the "nose" of the tank, at which point the molten glass is clearest and most thoroughly fused. If the factory is a "hand" plant, the glass is gathered slowly and uniformly into a lump about the size of the human head, through an opening in the tank. The man doing this work is very skilled, as carelessness in this operation would produce threads and strings in the finished glass. He is called a "gatherer" and collects the molten glass on the end of a "blow-pipe" by means of twisting and rolling motions, part of which occur while the "blow-pipe" is immersed in the hot, viscid glass and part of which take place when at intervals he removes the "lump" temporarily for the purpose of cooling the handle of the "blow-pipe."

When the "lump" is of the requisite size it is carried to the blower, who works it in a mold, twisting and rolling and occasionally blowing through the pipe, until a "cap" is formed. This cap determines the size of the roller or cylinder of glass. The blower now carries the lump to the blow-furnace, and standing upon a dangerously narrow gangway, he alternately heats it in the furnace and swings it over a cellar-like pit beneath his gangway, occasionally blowing into the pipe, until by sheer muscle and lung-power he lengthens the glass into a great, beautiful cylinder, open at the opposite end. The cylinder is then placed on a wooden "horse" to cool and the blow-pipe "capped off"; then it is cracked open on one side of its full length. It is now ready for the second stage—flattening.

Machine-blowing differs from hand-blowing in that the cylinder is either blown directly from the molten glass in the tank, or the glass is ladled out into a shallow "pot" of fire-clay and then blown. No gathering is necessary. The blow-pipe, operating by electricity, descends vertically into the glass, hesitates an instant, then slowly, almost imperceptibly moves upward, the hollow glass-cylinder sparkling and reflecting the varied hues from electric lights and the cherry red of the glowing tank, following in its wake. It is truly a beautiful creation—this immense cylinder of glass. But it barely reaches its length of twenty-two feet, when it is lowered ingloriously to a wooden horse and promptly "capped"—by electricity—into convenient lengths for the flattener.

The flattener's assistant—called a "shove-boy"—placed the short cylinder (the hand-made is about fifty-six inches long and the machine-made usually forty-four inches in length) already cracked open, upon a light iron-carriage, and slides the carriage through a heated passageway to the entrance of the flattening-oven. The oven proper contains a revolving "table" supporting four large flat stones, each capable of accommodating a full-sized sheet of glass, and arranged in a circle, so that one stone of the four is always in front of the flattener.

In a few moments the cylinder softens and begins to fall away at the point at which it is split open; then the flattener by means of a long iron-rod, lifts it on to the flattening-stone directly in front of himself, pushes the drooping edges down until they lie on the stone, and with

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TEMPLE OF NEPTUNE, PÆSTUM G. R. BALLANCE

a soft-wood block attached to another iron-rod, "rubs out" the wrinkles until the glass is perfectly smooth and flat. At this point, he transfers a partly cooled sheet of glass from the stone at his right to a carrying-device of long bars and small wheels, signals the shove-boy to revolve the flattening-table, and starts all over again by lifting another cylinder on to the stone.

The flattened glass leaves the oven by way of a long covered passageway, being carried by the arrangement of rods and wheels previously mentioned. As it requires something like a half hour for the sheet to reach the outlet, it is cooled gradually, tempering the glass and rendering it less brittle. It is now cool enough to be handled by men wearing gloves or leather-pads on their hands. These men take the sheets from the cooling "lear," stand them upright in a wooden cage, and then lower the cage for a few minutes into a vat of steaming water containing nitric acid. This is to cleanse the glass of all soot and other dirt it has accumulated in the flattening-oven; also to clear the glass itself. As soon as the glass is dry, it is ready to cut.

Upon first entering a glass-cutting room, one is impressed by two things: The opacity of glass when standing in a pile of several hundred sheets, and the seeming carelessness with which the glass-cutters handle the fragile sheets. Accustomed to seeing the glass in a single light or pane, clear and transparent, the great stacks of greenish-looking stuff is, indeed, a strange sight. And the way in which the cutter throws it about makes one shudder for his safety. Catching with bare hands one of the great sheets, nearly four feet wide and five feet long, he advances to the cutting-table, whirls the sheet up sidewise and literally throws it flat upon the table. The principle involved seems to be, the harder and faster the sheet of glass descends, the softer is the compressed-air cushion formed beneath it: consequently it lessens the danger of breakage.

The cutting-table faces a soft northern light, at once suggestive of the photographer's operating-room, and is bounded on the front and left sides by a steel-square marked off in inches. At the back of the table, also just below the edge

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HAVING THEIR PICTURE MADE ALICE J. PLATT

in front, are steel-pegs an inch apart and placed to correspond with the markings on the square. A long wooden rule, fitted with a steel-point to engage the pegs at the back of the table, and with a vertical pin to fit between the pegs of the row in front, serves to guide the cutting.

The actual cutting is done with a tiny diamond, often smaller than the head of an ordinary pin, set in a copper-ferrule, to which are attached a guide and a handle. Grasping the handle of the diamond-holder much after the manner in which many people hold a pen or pencil—that is, with the handle between the first and second fingers, and so held by light pressure with the thumb and first finger—the cutter adjusts his rule, and then with movements so rapid as almost to baffle the eye to follow, reaches up along the rule's edge and pulls the diamond lightly and delicately—yet oh! so swiftly—over the surface of the glass. Then, almost before the diamond has ceased to travel, he slides the sheet of glass deftly to the left edge of the table, and with a downward snap, breaks it smoothly and evenly at the point marked by the diamond. The diamond does not cut the glass; it merely breaks the surface and the sheet must be snapped downward—and immediately—to complete the work. A glass-cutter's hands in action are a study in legerdemain. From long practice they perform the dexterous moves of shifting and "squaring up" the glass; drawing the diamond, breaking off, etc., with marvelous rapidity.

As the cutter works he assorts the lights into three or more qualities. In fact, the sorting precedes the actual cutting, for the instant the sheet strikes the table the cutter's skilled eye determines quickly the sizes and qualities into which it is to be cut. And if he has orders for "picture-glass," all of the thinnest and finest strips, as cut from the sheet, are set aside, later to be inspected carefully and cut into dryplates. This, of course, in a factory where sorting dryplates is only a side-line. In the dryplate department of the large window-glass factory previously mentioned, only the very finest glass is handled and consequently most of it goes into dryplates. Three of the most popular dryplates sizes are 10 x 14, 8 x 10 and 16 x 20—for not always are plates coated in the sizes with which the photographer is familiar, but in sizes which will cut into the commercial dimensions, 10 x 14 into two 5 x 7's, 16 x 20 into two 8 x 10's, etc.

The final stage of dryplate-making is the actual coating of the glass with the sensitive emulsion, and naturally occurs in a dryplate-factory proper. This process, like the foregoing, is extremely interesting, but, by reason of the sensitiveness to light of the emulsion employed, the greater part of the work must be done under the rays of our familiar ruby light, and, therefore, is not followed so readily by the layman. However, a trip through either or both plants—window-glass or dryplate—is an enlightening experience for the photographer.

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Oil and Bromoil Printing

AT the autumn exhibitions, this year, there have been a good many pictures which were by the bromoil-process. At the London Salon of Photography the visitor can only guess at the method of printing employed, as the catalog gives no information; but it is not necessary usually to have such information in a printed form, the exhibit itself in most cases shows plainly enough whether it is, or is not, an oil or bromoil—usually, we may add, by the presence of defects of which such prints are seldom free, although they are not altogether inherent in the process. At the exhibition of the Royal Photographic Society we find that out of two hundred and four professedly pictorial exhibits, twenty-eight are stated to be by bromoil, five by oil, and there are others which are undescribed, but which are clearly to be put in the same category. Putting the two exhibitions together, it is likely that these oil-printing methods have been used in the production of some twenty per cent of the pictures shown, so that the importance of the process, at least as far as the exhibiting photographer is concerned, cannot be gainsaid.

How far the non-exhibiting worker uses them is another question, and a very little familiarity with the rank and file of amateurs is sufficient to show that the proportion is a very much smaller one. It cannot be five per cent or anything approaching it. For large work, bromide paper is used to the almost complete exclusion of everything else, whereas for smaller work gaslight paper, printing-out paper, platinotype, and carbon, particularly the two former, almost fill the bill to the exclusion of the rest.

The explanation of this disparity is twofold, at least. There is the impression that these methods are difficult, and call for a dexterity of a kind quite different from that which other photography demands. There is also a genuine and well-founded dislike for some of the characteristics of the average oil-print, including in this term bromoil and bromoil-transfer.

The first of these deterrents is one which is fundamental, and not to be got over. What we may call the strictly photographic processes demand a skill of one sort, whereas the handwork-processes require a skill of another. It is not a matter of a higher or a lower ability, but of a different one. Many a man who can work in a sky with a brush or "control" an enlargement so as to give a final result very different from what would be got by straightforward photography, could not make a negative that would give a harmonious print filled with good gradation, to save his life; whereas the photographer, whose prints are marvels of what can be done by pure photography, is likely to be hopelessly at sea when he tries to introduce any form of handwork. It is not that one has any less of the artistic sense than the other, or may be any less appreciative of what can be done by the other: it is that a particular aptitude is lacking.

That a great many photographers object very strongly to certain defects commonly seen in work by the oil-processes is also well known, and the objection is shared by many who are not photographers but artists in other categories. We have a kind of lurking suspicion that some of those workers who are most devoted to oil and bromoil have set their hearts on these very faults rather than on the good qualities of the various popular processes.

If we take the typical bromoil-exhibition picture, the one which is recognizable at a glance as being by that method, and try to analyze it to see in what way it is different from its neighbors, we find that its most striking characteristic is that the tones are "messed up." Where a platinum-print would show a beautifully even gradation of tone, the bromoil is patchy and irregular. Where the one has its light and shade manifestly governed by the subject and the lighting, the other appears to have them influenced largely by some limitations of the process. If the oil-printer has made up his mind that the tone of a certain part is to be lighter or darker than the negative would give it, he seems to be unable to alter it without altering the tone of other parts near at hand. Anything like an abrupt and well-defined change seems impossible to him. Also the gradations at the ends of the scale in particular tend to run together, the lighter tones are weak and featureless and the deep shadows dull and heavy. To judge from many of the exhibited pictures, a luminous deep shadow would seem to be impossible in bromoil.

Our belief is that to a large extent these defects are not inherent in the process, but are caused by the photographer, either not recognizing them as defects, or not being sufficiently skillful to avoid them. If he would leave to photography the task of rendering the gradation truthfully, and recognize not only the powers but the limitations of the method, they would largely disappear. That this is so, we are convinced by the fact that at times we have found that a picture was an oil or bromoil when we never suspected it: the beautiful characteristic of photography

was as marked as it is in a good bromide or platinum print. This fact should be known.

Those who read these lines and have not yet taken up this branch of work will find that it offers a very fascinating field, if they start out from the very first determined not to lose photographic quality. Let them be content to make oil-prints to begin with, printing by contact. There is no real reason, as far as the process is concerned, why a quarter-plate should not be printed in oil as well as by a gaslight paper process: there need be no loss of definition and none of gradation. It is entertaining work, good practice, and will give results which the greatest admirer of a perfect photograph, in the strict sense of the word, can appreciate. It is a cheap process to work, the pigmenting is quite fascinating, and can be done in the evening as well as in the daytime, whereas there is a wider range of color obtainable than any silver-printing method can give.

Later on, if the enthusiast should feel himself tempted to go in for large work in bromoil, he has qualified himself in the best possible way for undertaking it, and may hope to find his pictures are free of blemishes.—W. D. in *Photography*.

"Take Our Pictures, Mister?"

MICHAEL GROSS

HAD not the fates decreed otherwise, I feel confident that, on the particular morning in question, I would have succeeded in firmly riveting upon the creamy surface of one of my carefully-dusted orthochromatic plates, the elusive, prize-winning landscape I had spent weeks searching for. Somehow or other, I felt that the mysteries of the Steelyard-Balance would that day be as an open book to me; that getting the proper exposure would be as easy as tumbling off the proverbial log; and that choice sections of beautiful scenery would present themselves at whatever time and place I selected. Add to this the circumstance that the day was an ideal one for photography; the weather cold and clear; the sun shining brightly, and you can see that there was nothing lacking to make the trip a success and the prize-winner's cup a certainty.

But, as I say, the fates interfered. On making a sharp turn into the road leading out towards the stretch of woods for which I was headed, I suddenly came upon a group of children playing. At sight of me, and the camera slung over my back, a shrill chorus of "Take our pictures, Mister?" and "Remember your promise, Mister!" went up on that still morning air that made the birds in the trees fly, abashed and disheartened, into the deepest thickets to hide.

It was then that I remembered to have met the same group of youngsters at play a few Sundays before, at which time, in their infinite mercy, they had let me proceed on my way in peace, but only after I had promised faithfully that I would surely take their pictures the very next time I passed their way. Here was the "next time" and, if I intended to set a shining example for these future citizens, it behooved me to make good on my promise.

Escape being, therefore, undesirable as well as impossible, I decided to let all hopes to get my prize-winning landscape go glimmering. I made up my mind, though, that if I could satisfy the demands of my little tormentors and still make the occasion yield something as near to good photography as was possible, I would certainly do it.

Amid a bedlam of "Ahs!" and "Ohs!" I set up my outfit and then took an inventory of the material I had to work with. The total showed eight potential photographees—three boys, two girls, two dogs, and a wagon—if a wooden soap-box set on four baby-carriage wheels could be so flatteringly designated.

Picture number one suggested itself immediately. The road down to the woods stretched away before us and I told the youngsters to run to the end of it. Bub, the beast of burden, was accordingly harnessed up, the wagon was filled to capacity—it happened to be a three-passenger flivver—and we were off. Half way down the hill the wagon outran the horse—or dog, rather—and went up, on and over him. Poor Bub was so mortified at such a thing happening in front of a perfect stranger that he went off into a fit of sulks. His lord and master thereupon placed him into the wagon until such time as he would become a more cheerful companion. Bub looked so forlorn and forsaken that I couldn't resist the temptation to take a shot at him—photographically speaking.

After Bub's recovery, the youngsters called

HOME FOR MEDICAL ATTENTION
BUB—AND THE THREE-PASSENGER "FLIVVER" MICHAEL GROSS

BUB—BEAST OF BURDEN MICHAEL GROSS

for Roy, a huge mastiff, and everybody joined in a game of "Ring Around Rosie." A good time was had by all, as the society-columns have it, with the exception of the dogs. Roy finally settled down on his haunches in an attitude that said as plainly as so many words: "Let Rosie do her own ringing around; I'm through." Bub also failed to enter into the spirit of the game and in trying to inject some enthusiasm into him, one of the youngsters stepped on his paw. There was a yelp of pain and Bub proceeded to give an imitation of a sum in addition, by putting down three and carrying one. There was nothing else to do but put him in the wagon and pull him home for medical attention.

I had but one plate left and I used that to take a picture of a trio of my little actors rounding the path to their home. Reading left to right we find, Bub, the beast of burden; Ellen, half-owner of Bub; and "Skinney," all-owner of the wagon and second half-owner of Bub.

I didn't take a prize-winning landscape that day, but I did make five kiddies supremely happy; gave myself a better time than I have had in months, and brought back five mementos of a few happy hours. And the prize-winning landscape isn't lost entirely, either. I'm going after it again next Sunday, only this time I shall take a different road.

In looking for subjects, the camerist should not be too quick to dismiss a closed-in-landscape seen on a gloomy or sunless day, when it may lack pictorial interest. He should make a mental or written record of its general appearance, visit the spot on a bright day or when the sun imparts character to the scene and creates a picture. He will be rewarded for it. W. A. F.

Photographic Copying by Magnesium-Light

L. SOWERBY

MAGNIFICATION

Focal Length	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
3	1·6	**3·3**	**2·2**	**1·8**	**1·6**	**1·8**	**2·3**	**3·9**	1·6	2·6	4·1
$3\frac{1}{2}$	2·2	**4·4**	**3·0**	**2·5**	**2·2**	**2·5**	**3·1**	**5·2**	2·2	3·6	*5·6*
4	2·6	1·5	**3·9**	**3·2**	**2·8**	**3·2**	**4·0**	1·7	2·9	4·7	*1·8*
$4\frac{1}{2}$	3·6	1·8	**4·8**	**4·0**	**3·6**	**4·0**	**5·2**	2·2	3·7	6·2	*2·3*
5	4·4	2·3	1·5	**5.2**	**4·4**	**5·2**	1·6	2·7	4·6	*1·8*	*2·9*
$5\frac{1}{2}$	5·4	2·8	1·8	1·5	**5·6**	1·5	2·0	3·3	*5·5*	*2·2*	*3·5*
6	6·4	3·3	2·2	1·8	1·6	1·8	2·3	3·9	*1·7*	*2·7*	*4·1*
$6\frac{1}{2}$	*1·9*	3·8	2·6	2·1	1·9	2·1	2·7	4·6	*1·9*	*3·1*	*4.8*
7	*2·2*	4·4	3·0	2·5	2·2	2·5	3·1	5·3	*2·3*	*3·6*	*5·6*
$7\frac{1}{2}$	*2·5*	5·1	3·4	2·8	2·5	2·9	3·6	6·1	*2·6*	*4·1*	*6·4*
8	*2·8*	5·8	3·9	3·2	2·9	3·3	4·1	*1·8*	*2·9*	*4·7*	*7·3*
u	11·0	7·0	5·0	4·0	3·0	2·5	2·0	1·67	1·50	1·41	1·33

WITH many photographers it must be a common experience to have to copy photographic prints for one purpose or another. In doing so, it is found frequently very difficult to get a result in which the grain of the paper of the original print is invisible, especially if this paper be slightly rough.

The prominence of the grain is dependent entirely on the way in which the print is lighted, for irregularities on the surface of the paper are seen only when they catch the light or cast a shadow. In order to avoid this, it is clearly necessary either to illuminate the print perfectly evenly from all directions, or to arrange the source of light in exactly the position occupied by the lens of the camera, so that only the illuminated parts of the paper are to be seen by the lens. This later alternative, of course, is quite out of the question, and therefore we have to rely on obtaining an illumination which shall be as even as may be.

It is quite possible to use daylight for the purpose; but it then becomes necessary to do the work out of doors, for the limited area of the ordinary window precludes a uniform lighting of the print, even when reflectors are called into requisition.

Artificial light, by reason of the ease with which it can be controlled, is easier to use, and gives more certain results; moreover, exposures can be standardized to a great extent without difficulty. Of artificial illuminants, magnesium-ribbon takes the first place, on the score of efficiency, convenience and safety.

To produce even illumination of a flat surface, I have found it best to divide the ribbon necessary for the exposure into three pieces, which are then burned in succession, one above the camera, one to the left of it, and one to the right. They are burned in the same vertical plane as that in which the back of the camera lies, and at a distance of about one foot from it. To produce the effect of a fourth piece burned *below* the camera, a piece of white paper is placed on the table, and its reflecting effect during the burning of the three strips of ribbon produces a result comparable with that obtained by means of a fourth strip of magnesium. Thus the effect is obtained of equal amounts of light from points a little above, below, and to each side of the line joining the lens of the camera to the centres of the print and of the sensitive plate, giving a combined result much like illumination from the lens itself.

To descend to practical detail, it may be well to mention at once that a tripod is by no means an ideal stand for the camera when copying, for, as the greatest care is necessary to get the camera level and square with the print, there are continual small adjustments to be made, each of which, with a tripod, involves releveling the camera, and in doing this it is very easy to upset the distance from lens to print.

It is best, therefore, if much copying is to be done, to make a small stand to which the camera may be screwed as to a tripod. All that is necessary is a stout piece of wood, with three strong legs screwed on to it, and with a hole to take a tripod-screw. I will not go into

details, for carpenters will be able to do the work without them, and those who are not wood-workers will not undertake the task. To support the print I have found nothing better than an enlarging-easel of the ordinary type.

Focusing may be done with the aid of any bright light—an acetylene cycle-lamp is particularly suitable. As it is not easy to tell when the image on the screen is precisely at its sharpest, it is best to stop down after focusing to about F/16, thus making certain that the maximum degree of sharpness has been attained. The lamp is then turned away from the print to be copied, and the magnesium-ribbon is ignited, the pieces being held in the positions mentioned. The ribbon cannot be held in the fingers while being burned, and it is supported best in one of the commercial "flashmeters" or, failing this, in pincers, or between a couple of coins.

The most convenient place to hold the ribbon is at the same distance from the easel on which the print is placed as the back of the camera, and about one foot away from it in a vertical or horizontal direction, and it is on this assumption that the accompanying exposure-table, in which the figures represent inches of magnesium-ribbon, has been based.

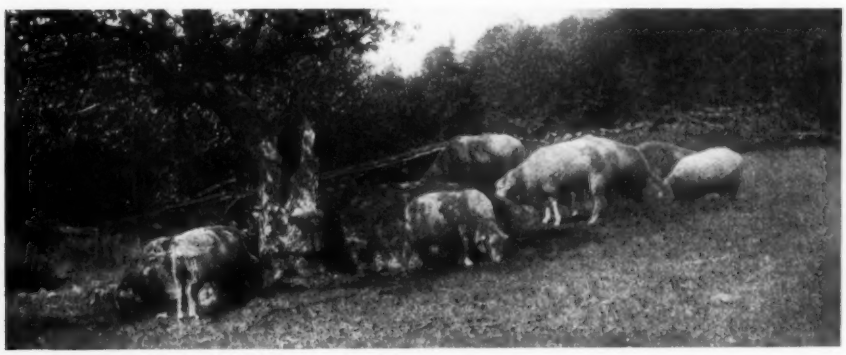
It is assumed also that the plate is of "Special Rapid" speed (about 120 Watkins), and the stop to be used is F/16, except where the figures are printed in heavy or in italic type. Where heavy type is used the stop must be F/32, and where italics are used it must be F/8. The figures and fractions at the head of the columns represent, as stated, the magnification, or the *linear ratio* of the sizes of the image and object. Figures are given for all lenses whose focal lengths lie between three inches and eight inches. The quantity of ribbon indicated must be burned in *each* of the three positions; the total length required for an exposure is thus three times that given in the table.

The line at the bottom of the table gives values of u (the distance of the object from the lens), and may be found useful in finding the magnification. To obtain the distance in inches, multiply the figures given by the focal length of the lens in use. A full table of this type may be found in nearly all photographic text-books, and for this reason, alone, I have ventured to present the table in this incomplete form.

It may have struck some readers as peculiar that Special Rapid plates have been recommended in preference to those specially prepared for copying-work. The reason for this is concerned with the development of the exposed plate.

Most photographers, nowadays, use some system of time-development, and the time development for copies is *from fifty to seventy-five per cent. longer* than for ordinary landscapes. To use this information it is necessary to know how long to develop a landscape-exposure on the plates used for copying, and therefore the use of the plates with which the operator is familiar is to be recommended. Only where much copying is to be done is it advisable to launch out into a new brand of plates whose development-speed is an unknown quantity.

In conclusion, it should be pointed out that the ability to copy successfully any photograph on reasonably smooth paper puts a very great power in the hands of the pictorial photographer, who is thus enabled to work up a print as may be desired, and then copy it, so that as many reproductions of it as necessary may be prepared, and at the same time these prints, though greatly modified, show no sign of hand-work for the whole of the final image is photographic.



IN SUMMER-SUNSHINE MYRA D. SCALES

XUM

Making Lantern-Slides

TECHNICO

BEFORE going into the details of making lantern-slides, it may be well to say a few words about the value of lantern-slides to the amateur-photographer. We all appreciate the usefulness of slides for lecture-purposes, but few amateurs have realized their value to show photographs to the best advantage even on occasions no more formal than the showing of a few pictures to two or three friends. If we show an album filled with prints, our friends will probably have forgotten about it the next morning; but the same pictures projected on a screen will be remembered by them, and will create real interest and give pleasure.

A screen four feet long is large enough for an ordinary room and it may be set up in a few moments, and is amply illuminated by a simple lantern that may be connected to the house-wires as easily as an electric iron. Equipped with such a lantern, the photographer may, at a few moments' notice, show his pictures to better advantage than by any other method. Not only will the pictures be large, but they will have a brilliancy impossible to obtain in the best prints or enlargements, because the highest lights on the illuminated screen can be made much brighter than on paper. As a striking example of this, I would point to a snow-scene photographed in bright sunlight. The snow in the shadows is brighter than white paper seen in ordinary light, in the sunshine it is much brighter; yet the best we can do in a print is to let the white paper reproduce the brightest spots of sunlight and darker tones the shadows. So if we reproduce the gradations of the scene our print must be much too dark to look at all like sunshine on snow. Now, in the slide we can get all the gradations we need in the print; but for the highest lights we have a brilliantly illuminated screen which can reproduce faithfully the sunshine on the snow.

In cost, lantern-slide plates are about equal to the best grades of 5 x 7 developing-paper; but as a very small negative is all that is required, the photographer will find the expense to make negatives about 2 x 3 inches and slides, less than that to work with a 5 x 7 camera and make the usual contact prints.

When making prints from a number of negatives made under different conditions, we usually find it necessary to use different grades of paper. In most makes of lantern-plates, there is only one grade; but we have much more control over the contrast. This is due to the circumstance that in a print the surface is all we can see, and by modifying the exposure we cannot change its contrast very much. But in a lantern-slide we see the image right through the film. So by giving a short exposure, and developing until the image extends throughout the entire thickness of the film, we get much more contrast than we would by giving a long exposure and stopping development when the image extends only part way through the emulsion. However, we can get lantern-plates corresponding to contrast and soft paper: nearly all American lantern-plates are fairly contrasty and rated about the same as ordinary grades of developing-paper; and nearly all English plates—except the slow gaslight varieties—are much softer and better suited to negatives requiring soft papers. Lantern-slide plates are $3\frac{1}{4}$ x 4 inches, but the lantern shows only about a three-inch square, so that the plate must not be filled. If we have negatives three inches or less long, we can print lantern-slides by contact in a frame. But if they are larger, we have to make them by reduction; that is, by photographing the negative on the lantern-plate.

To make slides by reduction, we must set up the negative so as to get an even light passing through it and exclude most of the light around it. We can do this by cutting a hole a quarter of an inch smaller than the negative in the bottom of a box, placing the box on a table on its side, the hole facing a window to which it should be quite close. We then fasten a piece of ground-glass over the hole on the outside of the box, and some springs or turn-buttons on the other side of the wood, to hold the negative over the hole. We then provide a kit to hold a $3\frac{1}{4}$ x 4 plate in our camera and mark its position on the ground-glass. In the center of this space we mark a $2\frac{3}{4}$-inch square or, if preferred, a space $2\frac{3}{4}$ high and 3 inches long. The reason for this is that although most lanterns show a three-inch square, the binding-strips will cut down the available height of the slide to just over $2\frac{3}{4}$ inches. See Fig. 1. The length is limited by the space shown by the lantern, so that it may be made three inches long if there is no objection to the horizontal pictures being a little larger than vertical ones. Should the photographer be equipped with an artificial light enlarging-outfit, he can use that light in place of daylight and

avoid the trouble caused by sudden changes of light—(for the last year I have been using a mercury vapor M tube diffused by one thickness of flashed opal glass).

A very neat appearance can be given to the slides by printing them with a very narrow white border. To do this, we first mat the negatives, including just what we want to show, by sticking strips of black paper to the edges. We cut needle-paper into strips of different widths and stick the desired width to the edges of the negative with mucilage and cut off with scissors any paper that overlaps the edges. This is easier than to cut mats to suit all negatives and better than to use a few stock-sizes. With a little practice we can soon mat negatives square; but the beginner will find a piece of card—a postcard will do—handy to use as a square. For contact-slides, the negatives should be matted on the back or there may be trouble to get slides sharp through lack of contact between the negative and the slide. For reduction, the negatives may be matted on either side.

If our negatives are larger than three inches, we provide our slide fitted with the $3\frac{1}{4}$ by 4 kit, with a lantern-plate. This work, as well as developing, etc., may be done in a much stronger light than is safe for developing negatives; but it must be red. The lantern-plates are slower than most negative-plates; but faster than developing-paper, so that the light used in the printing-room would fog them. We now place a negative over the hole in the box and our camera squarely opposite it. It will not matter if the front of the camera is in the box or not, so long as no direct light from the window can reach the lens. We focus the image of the negative on the ground-glass of the camera, making sure that it comes in the center of the marked space and is of the right size. It is quite impossible to say what exposure to give; but we can try five seconds at F/16 with good daylight and an average negative.

In the case of contact-slides, we shall simply put the negative in a frame, a lantern-plate on it —just as we would with paper—close the frame and expose. We could try three seconds four feet from an ordinary electric light; but here, again, the first exposure will be purely a guess. In placing plates in the holder or placing them in the printing-frame, we must be very careful to brush off all dust with a wide camel-hair brush; for all pinholes will be magnified several hundred times on the screen.

In ordinary circumstances, there is no good reason to use developers different from the formulæ given by the plate-makers, although almost any good developer is recommended. A properly exposed plate will develop in two or three minutes, and with an average negative we should time the exposure so as to get the required density in that time. In the case of flat negatives, we can reduce the exposure and lengthen the development to five minutes or more; and with very contrasty negatives we may have to expose long enough to get the required density in about one minute. We can fix the plate in the hypo we use for negatives. The density of the slide is of the greatest importance and the beginner may have some trouble to get it just right, as, unlike prints, the unfixed slide will look much darker than it will after fixing. The proper density of the finished slide is such that the picture looks a little too light when examined by transmitted daylight, and a little too dark when placed, film-down, on white paper. Another good guide is to place the slide, film-down, on an open book. Any part dense enough to hide the printing entirely will show black on the screen with no detail visible; so if more than the deepest shadows hide the printing the slide is too dense.

It is not very easy to get our exposures just right so as to get the best contrast with the same length of development as is necessary to give the right density. But fortunately we can get very good results by reducing the density of slides if they are too dark. So if we find a slide developing too fast—as a result of overexposure —we do not take it out of the developer when dark enough. If we did, it would lack the proper contrast; but we develop it about as long as we would a normally exposed plate, disregarding the density. Then, after fixing and washing for a few minutes, we reduce the density as much as necessary with: Water, 10 oz.; hypo, 1 oz.; potassium ferricyanide, 1 dram. In this way we can save plates that are a little overexposed and get results nearly as good as with normal exposure. This solution may stain the slides, but the stain usually washes out. If it does not, place the slide in weak hydrochloric acid, about $\frac{1}{2}$ oz. of acid to 10 of water, this solution will remove the stain. The acid may also be used to clear stains caused by long development in old developer.

If the slide is too thin, it can be intensified if it has detail in the highlights; but if it has clear glass in the highlights, we cannot make a good slide of it as no intensifier can build up an image from clear glass. This is a point very often overlooked by beginners in their first attempts to produce lantern-slides that are right. In other words, we can save an underdeveloped slide, but one much underexposed is useless. The intensifier is made as follows:

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THE GHOST OF THE MONARCH

WARREN R. LAITY

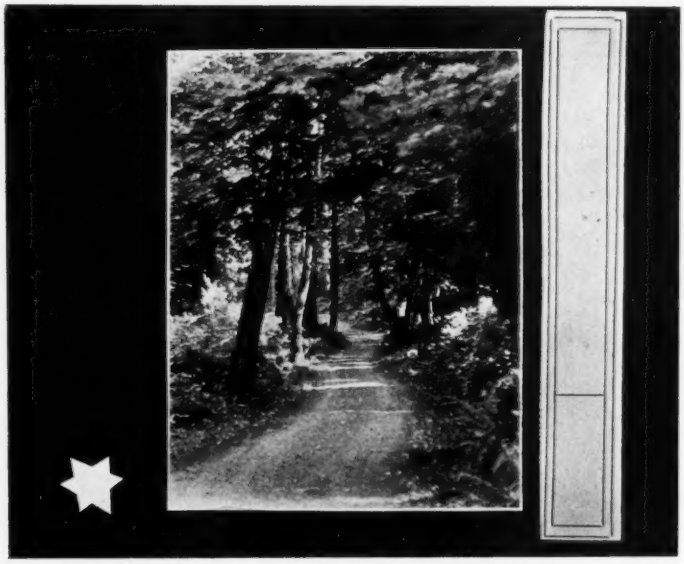


FIGURE 1

A COMPLETED SLIDE SHOWING SPACE OCCUPIED BY THE PICTURE, MAT WITH WHITE MARGIN, BINDING AND LABELS

A		B	
Potassium bromide	¼ oz.	Sodium Sulphite	2 oz.
Mercuric bichloride	¼ oz.	Water	16 oz.
Water	16 oz.		

The slide is bleached in solution A, rinsed in water and placed in solution B, where it darkens in a few seconds. Intensification is not as satisfactory as reduction, because the permanence of intensified slides is questionable, and if we desire to tone them we cannot do so satisfactorily and this is a drawback.

Both the reducer and solution A of the intensifier are extremely poisonous and should be used with great care.

We now wash the slides thoroughly, half an hour in running water will do, and, if black and white results are wanted, we mop the surface of the slides with a wad of wet cotton and place them on a rack to dry. If we want warm-toned slides, which give a very pleasing effect—particularly as a change from the black and white ones—we can tone our slides, or we can make warm-toned slides by development.

There are a great many ways to tone slides; but the following is one of the best. It produces slides ranging in tone from warm-black to red-chalk. A satisfactory brown can be made; but this method is most suitable for warm-blacks or decided reds. The black-and-white slide is washed well and toned in the following solution:

Copper sulphate	30 grains
Potassium citrate	240 grains
Potassium ferricyanide	25 grains
Water	16 ounces

The warm-black will be reached in about a minute and toning will go on for several minutes until the red-chalk color is reached.

If we want a sepia-tone, we can get it by redeveloping as we would with bromide-paper. We make up the following solutions:

	Saturated solution of	
A	Potassium permanganate	¼ oz.
	Hydrochloric acid	¼ oz.
	Water	6 oz.
B	Sodium sulphide	60 grs.
	Water	6 oz.

We place the black-and-white slide in solution A where it soon bleaches, then, after a short rinse we transfer it to solution B where it turns sepia in a few seconds. When using this formula, a very thorough washing after fixing is not necessary.

The above methods are two well-known ways

to get warm-toned slides; I will now give a method to produce olive-tones ranging from olive-black —similar to Artura—to a decided olive.

This method, I believe, has not been published before.

We expose the ordinary lantern-plate just as we did for black-and-white slides and develop it in the following:

	Pyro	1 oz.
A	Potassium Metabisulphite	80 grs.
	Water	16 oz.
B	Sodium Carbonate	$1\frac{1}{4}$ oz.
	Water	16 oz.

a stain is not always a disadvantage and may be used to give the slide the effect of a picture on buff paper. It can be produced readily by allowing the developer to stand a few moments after mixing, or by adding some old developer to the new. If an olive-black is wanted, we dissolve $\frac{1}{2}$ oz. of sodium sulphite in 16 oz. of water and add half an ounce of this solution to the developer. A greater quantity of sulphite solution followed by plain hypo or a smaller quantity followed by acid-hypo will have the same effect. If after washing the color of the slide is warmer than we wanted, we can change it as much as necessary or, if we like, back to

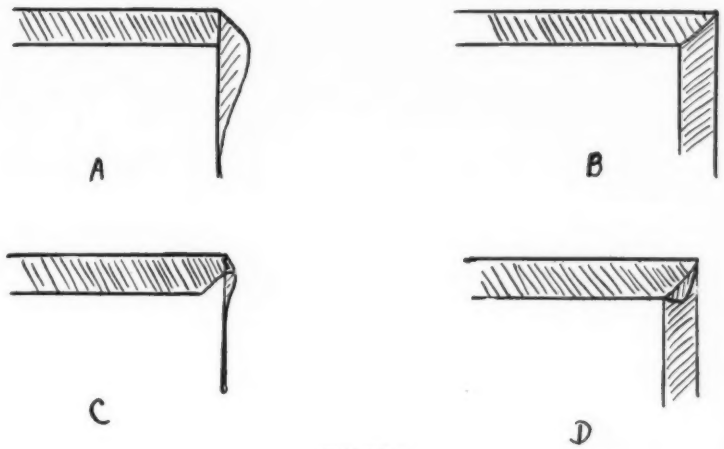


FIGURE 2

A PROPER WAY TO BIND SLIDE
B NEAT CORNER
C THE WRONG WAY
D BAD CORNER

For a rich olive-tone we use 1 part of A, 1 part of B and 6 parts of water. This developer oxidizes rapidly when mixed and can be used only once without staining the slides; though, of course, when making a quantity of slides, we can develop several at once in one large tray. When the slide is developed, we rinse it and fix it in plain hypo about 25% solution. If a less decided olive is wanted we develop the slide as above and fix in acid-hypo. Either ordinary alum or the chrome-alum acid-fixing baths may be used. So we can take whichever we use for our negatives. When the slide is fixed, we must not judge the color of the slide until it has been washed fifteen or twenty minutes as the color changes in water and the tone becomes warmer. The slides should be quite free of stain, and if the margins or other clear parts show any color it is probably due to underexposure and forced development. However, a black tone by dipping in water to which a few drops of hydrochloric acid have been added. At this stage we must watch the slide closely and rinse the acid off as soon as enough color is removed; after a short wash we put it to dry.

We now take the dry slides and mat them with needle-paper as we did the negatives, but we put mucilage only in the extreme corners of the slide, so that it is covered by the binding-strips and cannot be seen from either side of the slide. We stick the strips of paper so as to show a white margin $\frac{1}{16}$ of an inch wide as in Fig. 1. More margin will give too much glare round the picture; but the narrow margin looks well. In spite of dusting our plates, we are almost sure to find some pinholes. These we can spot, using watercolors of suitable color. The great thing in spotting is to use the paint as dry as possible, as if at all liquid it will be absorbed by the gelatin around the pinhole and

leave the hole not only visible but emphasized by a dark ring around it.

We now cover the slides with clean cover-glasses. Spoiled slides answer very well and one can have the films removed easily by allowing them to soak in very old pyro-developer over night. Next we place several binding-strips with the end towards us on a table and wet them with a wad of cotton saturated with water. When the first strip is limp, we wipe off the excess of water with the cotton after wringing it out, then holding the slide and cover-glass together we place them in the center of the strip at the end nearest us and roll the slide and cover over away from us until the binding-strip is stuck to all four edges. As we roll the slide with one hand, we press the binding-strip into good contact *with the edges only* with the other hand. Then, by drawing the thumb and finger over the top of the slide, we press the binding-strip down on both sides, taking care to stick it down to the very end, as in Fig. 2. We then go on and do the same thing to the other three sides. When we stick the binding-strip to the very end—as in A—we find that on bending the next side down there is no loose corner of paper left. See B Fig. 2. But if we do not stick it to the very end, as in C, on bending down the binder on the next side we get the loose paper corner, as in D. By the time that the first slide is bound another binding-strip will be limp and ready for the next slide, so that after the first, we do not have to wait for the water to soak in. We now put a star in the bottom left-hand corner of the slide, as in Fig. 1, and, if desired, a label on the opposite end. The star indicates the top right-hand corner of the slide when it is inverted to put into the lantern, which, of course, in projecting the picture, inverts it again.

In conclusion, I would suggest to the amateur to make a few slides from some of his negatives and get some one to project them. If the slides are made about right, I am sure that he will be delighted with the result, and will feel that it is well worth while to take up this branch of photography.

Suiting the Paper to the Negative

R. CHILD BAYLEY

EVERY photographer of any experience at all knows that by a choice of printing-methods he can get bright prints full of contrast or soft delicate ones at will from the same negative, and this power is a very valuable one in view of the difficulty to determine precisely how far to carry development of the negative in each particular case. We may have exposed and developed correctly, according to the generally accepted ideas of what is correct; but we may then find that one such negative is more effective when printed to give contrast, whereas another calls for a printing-process of just the opposite kind to meet technical and artistic requirements.

In the last twenty or thirty years there has been a gradual alteration in the character of the negatives produced, the tendency being all the time to make negatives softer and softer. Many a photographer doing first-rate work today simply could not make a good print from the kind of negative in vogue a generation ago, whereas the modern negative to the old-time photographer would seem hopelessly weak and flat. Some of this must be put down to a gradually increasing estimation of delicacy and softness in our pictures; but this accounts for only a little of it. Some of the old albumenized-paper prints were beautifully delicate and harmonious. The greater part of the change is due to the introduction of printing-processes that require soft negatives. Some of the special-development papers, which have been introduced in the last few years for professional use, need negatives specially made to suit them in this respect, if the full capacity of the paper is to be brought out.

The amateur today makes use chiefly of three processes only—printing-out paper, gaslight, and rapid bromide paper. A negative of full contrast is what is required for printing-out paper, whether of the self-toning or of the separately-toned kind. Failing that, rapid bromide paper can be used for contact-printing, or one of the special gaslight papers made to give soft results, the so-called "portrait" papers. For softer negatives still, the ordinary gaslight paper can be used, whereas special gaslight papers are made which will give quite bright results from negatives which are too thin to give presentable pictures in any other way whatever.

To get the best result out of all one's negatives, even if these do not include any that are excessively harsh, or thin, more than one paper must

XUM

Hon. Mention, Domestic Pets Competition

OLAF — WARD E. BRYAN

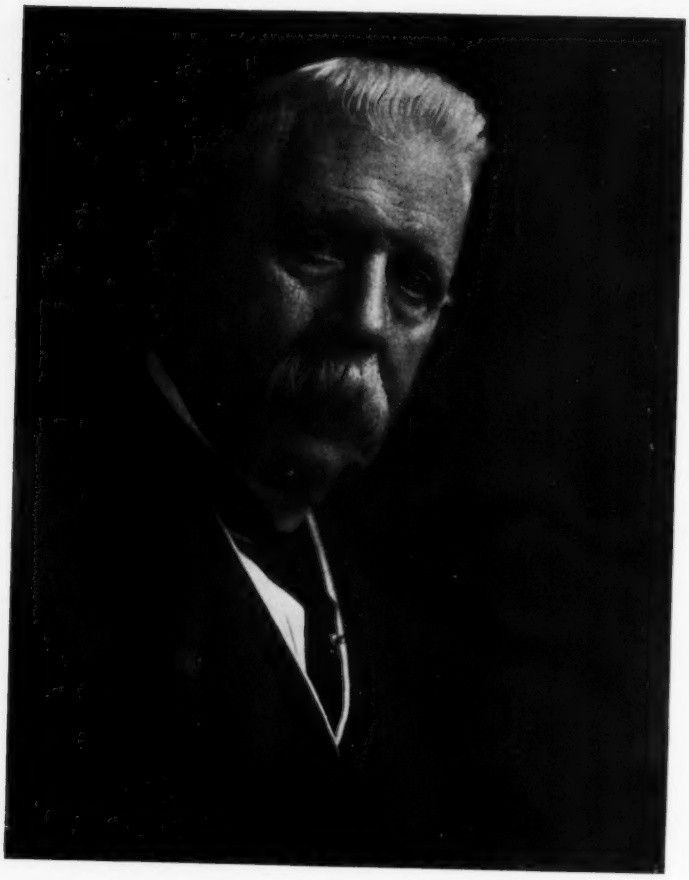
be used; and it is well to recognize this, and if any packet is found to give specially bright or specially flat pictures, not to use it indiscriminately, but to keep it for use when one or another quality is needed.

It is not recognized as generally as it might be that, even with the same brand of printing-paper, different batches differ very decidedly in the character of the gradation which they yield, and these differences have become more noticeable since war-conditions have compelled manufacturers to find fresh sources of raw material. We put the following question the other day to one of the largest users of bromide paper in this country: "Which brand of bromide paper, in your experience, gives the strongest contrasts and which the weakest?" His reply was to the effect that he could not say that any one brand could bear either description; but that certain samples of certain brands had possessed such a distinction, and that when he found a paper which gave unusual contrast or unusual softness, he put some of that particular batch aside for special work. But it was not safe to assume that any other batch of the same paper would necessarily have the same characteristics. The makers themselves recognize these differences, and we may be quite sure that they are alive to the importance of keeping them down to the minimum, in the interest of the reputation of their product for uniformity.

It is not only in the choice of the medium itself that we can control the gradation in the print: there is its treatment to be considered. The character and strength of the light by which contact-printing is done have an important influence on the result. A very thin negative, for example, will give a much more brilliant print if the exposure is made to a feeble light than to a strong one, and using the same illuminant and the same paper, a greater degree of contrast is got by using an enlarging-lantern than by contact-printing. There are also special methods to get soft prints from harsh negatives, such as the Sterry process, whereas soft negatives can be made to give strong prints by first making the print, fixing and washing it, and then bleaching it, as if it were to be sulphide-toned, and then redeveloping it. In that case a second fixing is not required.

On the whole, such processes are not of much use: it is simpler and more satisfactory to rely upon two or three different qualities of a development-paper, and to aim at getting all our negatives well within the range of such stock as we possess. In that way we can be sure of doing the best in each case, and doing it without much waste of either time or materials in experimenting, which these special processes generally involve.—*Photography.*

ART is one of the three incarnations of the ideal in the real: Love the essence of human life, science the essence of truth, and art the essence of beauty.—*Charles François Gounod.*



EUGENE A. HOLTON
T. E. HALLDORSON

Coloring Lantern-Slides with Transparent Oil-Colors

ROBERT J. BUCHANAN

THE test of a lantern-slide is its appearance upon the screen. A colored slide may seem to be quite satisfactory, but when projected on the screen, it may prove to be the reverse. The quality of the illuminant must be considered when coloring a slide.

In America, aniline watercolors have been used to color slides, almost to the exclusion of oil-colors and at a great artistic sacrifice. In England, on the contrary, the best lantern-slides are colored with transparent oil-colors. Coloring lantern-slides with oil-colors gives them greater depth and brilliance, than it is possible to obtain with aniline watercolors. All aniline colors fade quickly, although suitable transparent oil-colors are virtually permanent. This is particularly noticeable in colored transparencies exposed to sunlight.

In coloring lantern-slides, some artists use a retouching-frame, to hold the plate. Others hold the slide in the left hand, so that the light is reflected from a piece of white paper upon the table. There is still another way. A piece of photographic ground-glass is used, which is held with the slide in the hand between it and the light. It is important to select slides, which are suitable to color. They should be as perfect as possible. They may be a little dense, but must be quite transparent; above all else the details should be sharp.

Coloring lantern-slides with oil-colors requires the greatest care. The colors should be quite transparent and, at the same time, permanent. Many of the transparent oil-colors are notoriously fugitive. Dust must be excluded rigidly from the colors during the process. Only sufficient color should be mixed and that for immediate use—not alone for economy, but to keep the pigments absolutely clean. Small butter-dishes may be used and covered with cover-glasses. Some may prefer to mix their colors upon cover-glasses. In this way the transparency may be seen, before being applied to the slide. It is best to have good brushes, preferably of sable. Perhaps, three brushes may suffice; one of medium size, one somewhat smaller, and the third a very fine one for minute details. The test of a good brush, is to be able to draw it to a sharp point when moistened between the lips. It is economy to use the best.

In coloring wet-plate slides, they are varnished by flowing thin pale shellac-varnish over the surface. The slide should be warmed above a lamp before doing so, to prevent the chilling of the varnish, the surplus of which is returned to the bottle from the corner of the plate. A dryplate-slide may be similarly treated. However upon experiment this may prove to be unnecessary, merely by using the turpentine and medium to clean and prepare the surface of the slide. This may be applied with absorbent cotton, a piece of cheese-cloth or even a bit of canton-flannel. Care should be taken not to injure the delicate gelatine film in doing so. The slide is wiped dry, and no particle of dirt should be allowed to adhere to the plate, which should have a smooth velvet surface ready to receive the color.

With the transparencies and lantern-slides, the colors may be applied directly to the plate. Each artist must experiment until he finds the most suitable method, as no two artists will do the work in the same way. Where there are open spaces, with little details, as in the skies, trees, and foregrounds, the colors may be washed on with a brush. They are then stippled with the greatest care. Perhaps the best way to do this, is with the tips of the fingers; but the finished work must be left with a smooth velvet-surface, or as nearly so as possible, allowing no finger-marks to show. If the finger-tips or the balls of the fingers are not smooth enough for this delicate operation, their smoothness may be increased by rubbing them with a piece of fine pumice-stone or fine sand-paper. Sometimes a stippler is made by rolling some absorbent cotton around the end of a blunt stick. Over this pad of cotton, a piece of fine smooth kid is stretched; but this must be kept clean and dry to be of real value.

On transparencies and even in the larger areas of lantern-slides, where there is little or no detail, the simplest method is to daub or smear the color directly on the plate with the fingers. The sky is the most important part of a slide and requires expert treatment to apply the oil-colors smoothly, as explained before. Cloud-effects require more stippling to reduce the color. The highlights on clouds may be removed with a clean brush, moistened with turpentine and medium; but not wet. These cloud-effects may be made very beautiful, but they require great skill and are not recommended to amateurs unless thoroughly experienced.

What has been said with regard to the stip-

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pling of the skies, applies in a lesser degree, to the rest of the slide. Some of the details may be stippled with a brush, and others may not require any stippling at all. Should any color overlap the lines of the picture, it may be removed in any convenient way, such as with a clean brush, moist, but not wet, or with an ordinary stump moistened likewise.

When lantern-slides have been colored they must be kept free of dust, until dry. They may be dried quickly by artificial heat, but this to a great degree is obviated in the use of transparent oil-colors which dry rapidly, such as Roehrig's Transparent Oil Photo-Colors, recently introduced, and then using the medium as recommended. If greater brilliancy is desired the finished slide may be varnished, using Anthony's Diamond Varnish. This is flowed over the slide; it is very thin and volatile, and requires expert handling.

A Handy Viewing-Frame for Color-Transparencies

HAROLD G. GRAINGER

HAVING made from time to time a number of color transparencies by the Autochrome and Paget processes I found that a viewing-frame of some kind was necessary to get the best effect when showing them to my friends. The narrow binding-edge is not sufficient of itself to mask off the picture from the background when it is held up to the light for viewing; and a simple frame was made on the following lines, which proved quite efficient and valuable.

Diagram A shows a piece of card a little thicker than the transparencies when finished with lantern-slide binding, and for quarter-plates was cut to the size and shape indicated. In a couple of thin pieces of card (from a packet of bromide paper) exactly the same size as A, openings were cut $2\frac{3}{4} \times 3\frac{3}{4}$ inches so that when these cards were placed on each side of A, and a transparency was in the place provided for it, the lantern-slide binding was just covered up. These pieces of card B and C were then covered with thin gray mounting-paper. On B there was none to overlap except a piece $3\frac{1}{4}$ inch wide at the top, but C had a margin of fully an inch all around. When dry, the paper was cut at each corner of the cut-out spaces, and then folded and pasted on the back of the cards, the shaded portions representing the gray paper. The three cards being then ready for binding together, B was fastened to A, gray paper outwards. On the opposite side C was then pasted, and when firmly set, the outside edge of the mounting-paper was trimmed neatly to an even three-quarters of an inch all around. First the top and bottom, and afterwards the sides, were folded over and pasted to the back, and the frame was complete ready for use.

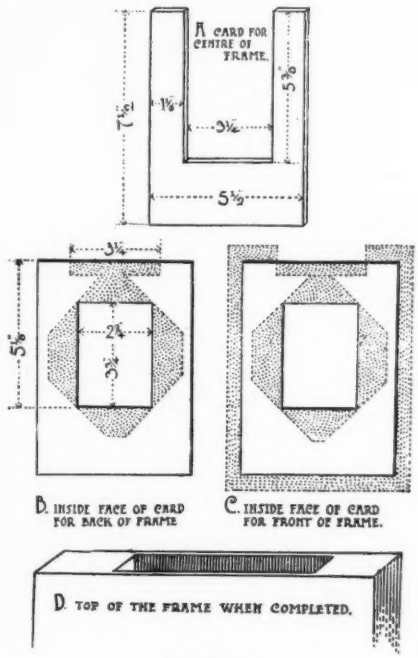


FIGURE 1

The use of mounting-paper facilitated very much the speedy fixing up of the frame. For examining lantern-slides of the ordinary type this is also a very effective method.

Photography.

STAGNANT WATER AND FENS — JAMES COOPER

Water in the Landscape

DR. GIORGIO MARESTI

(Translated and illustrated by James Cooper.)

HOW often, after having examined a landscape on the ground-glass of our camera, have we abandoned it with a dissatisfied feeling, exclaiming: "If there were only a little water, what a pretty view it would make!" and we have picked up our apparatus impatiently, imprecating the absence of the element whose presence has a more vivifying effect in a landscape than any other thing. How often we have wished for the mysterious, varied, picturesque reflections in front of a play of lines, of lights and shadows which only lacked the artistic complement of a mirror of water to endow with life and distinction a landscape that without it would have no artistic value! But whether the water constitutes the principal motive of the picture or forms merely a pleasing accessory, its importance in the composition of a landscape is such that it deserves a few words in support of the contention that it is valuable.

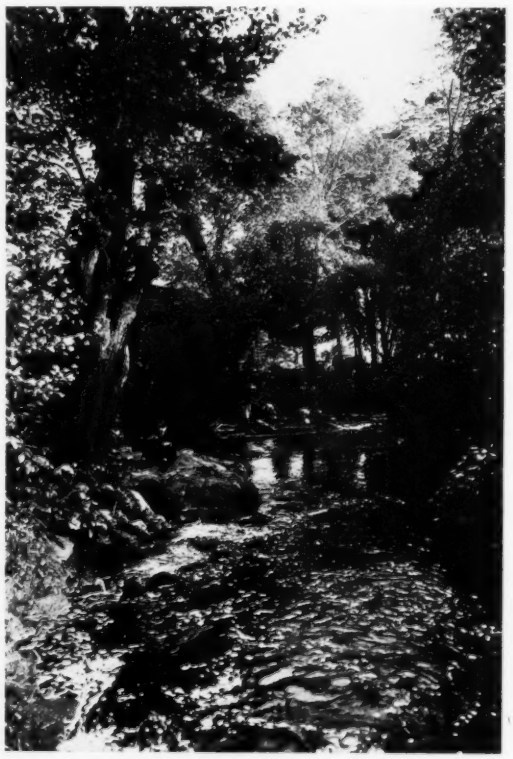
Of much value as artificial adjuncts, especially in the foreground of masses of water, are swamp-rushes, aquatic plants with their beautiful flowers, rocks in their varied groupings, a boat at anchor, fishing-utensils and many other things which disposed artistically in relation to the rest, may form a harmonious complement of the foreground, always so difficult to arrange, and may also serve as the principal or predominant motive. Aquatic animals, such as geese, ducks, or swans, may be coaxed into the most suitable position by a few persuasive bread-crumbs, and also furnish decorative motives, often vague, and by their motions in swimming serve to break the glassy surface of the water, distributing in tortuous stripes the otherwise too sharp reflections.

Another decorative element of singular beauty is the extremely varied play of the reflections of objects located in different planes in water with a slight movement of the surface; and a more majestic one is the mirror formed by a wide expanse of tranquil water showing clearly the reversed outlines of the horizon.

In this connection we would make a special observation: the camerist should always take the greatest care that the waterline runs par-

allel to the top and bottom of the plate, for the simple reason that a slanting water-line is an absurdity in either art or nature.

A horizontal line of water produces an impression of calmness and tranquillity; and the larger the mass of water, the greater is the sense of quiet majesty which is capable of producing many beautiful motives for interpretations of nature. A background consisting of a well-selected frame of mountains or woods completes the impression of immensity, and their reflected shadows, often interrupted by thin luminous strips, have a beautiful effect if done properly.



BABBLING BROOK JAMES COOPER

But when this frame limiting the upper part of the view, instead of being distant is much nearer to us and occupies a preponderating part of the picture, so that the reflections become merely a complement of the composition and not an important motive, care should be taken that the line that separates the water from the rest does not divide the view in the middle, producing two pictures, the real and the reflected, exactly alike in shape and tone-values, since that would be highly inartistic in its effect. Large masses of motionless or nearly motionless water are very apt to give the incautious photographer just such disagreeable duplications if he does not take care to have the dividing line above or below the center of the picture, as may best suit the character of the composition. In such cases, and generally in those where still or very slowly moving water is to be dealt with, it is well to produce a slight ripple on the surface either by throwing a stone or by any other convenient method. If a stone is used, one should wait until the little wave formed at first has spread over the whole surface. This will give a more truthful picture.

Stagnant water and fens, usually covered with a green scum, may nevertheless give excellent decorative reflections: in such case it would be impossible to move the surface in order to get more varied effects, and so it would have to be taken as it is, having a care to compose the surrounding objects in such a way as to obtain the best values of *chiaroscuro* and bring out the real picture in the wavy reflections.

Clouds reflected in the water have a fine effect, and if the photographer knows how to balance the values of sky, dark masses of foliage and reflections, he will be able to obtain delightful pictures with the most delicate tone-values. Contre-jour views, especially if made when the sun is slightly obscured or partly covered, have a particularly fascinating result due to the odd and beautiful effect of the luminosity on the surface of the water. In such views, it is necessary to use orthochromatic and antihalation plates, developed with soft-acting agents like amidol and metol, reducing when the contrasts are too harsh, so as to equalize the values which should be carefully retained.

I do not advise the amateur to pass off the sometimes very beautiful sunset cloud-effects as "moonlight views," as I am an enemy of all that is not sincere in art—it is but trash to the ingenuous. True art should avoid charlatanism, and an artistic expression is all the more effective the more sincere it is either objectively or subjectively. This is a truism to remember.

To return to our subject, I would say that the chief study of the amateur in this class of work

BREAKING THE SHORE-LINE
CONTRE-JOUR EFFECT
JAMES COOPER

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THE PLAY OF REFLECTIONS JAMES COOPER

should be to discover the *actinic values* of the various elements and the judicious use of yellow filters of different degrees of intensity—but always rather light than dark—with orthochromatic plates of good speed: light-colored filters and rapid ortho plates, so as to be able to obtain well-exposed instantaneous views, since this is necessary in order to fix properly the play of the reflections on the water. Slow exposures may be made if desired, but they should always be instantaneous when the decorative character is to be preserved.

Falls, cascades, rapid and tortuous torrents, fountains in action, babbling brooks with smiling wavelets, furnish splendid ornamental adjuncts to a landscape and should always be taken with a speed adapted to their motion in order to reproduce faithfully their varying characteristics: in all cases where there is water in action whether slight or rapid, the blur resulting from longer exposure than necessary would be artistically false and would have a bad effect even to the most indulgent eyes.

Water is beautiful in a landscape when it can be reproduced fluid, crystalline and limpid as it is in reality, and the great difficulty in so depicting it is just the reason why painters so rarely tackle it in their pictures, and those who interpret it correctly are extremely few.

For the photographer many difficulties are surmounted by the same means he uses to create his pictures—his camera, but it is not always that he does it well unless he proceeds with adequate artistic and technical judgment and a careful study of his subject.

Flowing water gives less brilliant reflections and of somewhat different character from those formed by water that is still or nearly so, but which are still capable of adorning and completing a landscape. When the water has a strong and constant movement as in the sea, the reflections are scattered over the surface and completely lost; but sometimes in the calm of an early autumn morning, when the horizon is invisible and the body of the sea lies apparently immovable, it assumes an almost muddy appearance, with broad, detailless reflections that resemble great oily blotches on a gray surface that are not displeasing to the eye and add much to the composition.

Whoever admires the magnificent play of reflections on the water in harbors or lagoons; whoever is enamored with the delicate poetry of the sunset; whoever delights in the glorious effects of clouds and lights, there is an infinite field for many an artistic picture.

In conclusion, I would insist that for such landscape motives orthochromatic, anti-halation plates are indispensable, used just as sold, without yellow filter. Development should be done with an agent that will not give too much density, and it is better more or less diluted to give a degree of softness to the negative.—*Il Corriere Fotografico.*

EDITORIAL

A New Lincoln Statue

FEBRUARY, as a commemorative number, is usually dedicated by magazine-publishers to George Washington, because his birthday falls on the twenty-second day of that month. During recent years, however, the tendency has been to assign that honor to Abraham Lincoln, whom many regard as America's greatest president. PHOTO-ERA, although accustomed to show its homage to the Father of his Country, in one form or another, in this instance gives precedence to the great emancipator—not that it loves Washington less, but Lincoln more. In giving temporary preference to the martyred president, PHOTO-ERA takes pleasure in presenting to its readers an excellent photograph of the most recent portrait-statue of Lincoln, the work of an American sculptor, Andrew O'Connor, of Massachusetts. The statue, which is being considered as a possible substitute for the disappointing Barnard figure—as a gift to Paris and London—was exhibited in New York, recently. It is about to be cast in bronze, and to be erected in Springfield, Illinois. The statue is of heroic size, fourteen feet in height, and for that reason it was impossible to obtain a good photograph of the whole figure—the original model—while it was in Mr. O'Connor's studio. The head alone—as reproduced in this issue—will suffice to give an idea of the beautiful modeling and the feeling of the sculptor for his subject. He portrays the great President at the time he was leaving Springfield, in 1861, to take up his duties in the White House.

Competent critics speak of Mr. O'Connor's work as expressing simple, manly dignity, inborn greatness, sweetness and pathos in his faraway gaze, and high intellectuality in the noble head and features. The pose is natural and easy, and his apparel appropriate and well-fitting. There is no suggestion of the grotesquely exaggerated hands and feet which appear in the Barnard statue. Confirmatory of this are the numerous photographs made by Brady of Lincoln at various periods from the time of his inauguration to within a few months of his assassination. The honor to make the first photograph of the O'Connor statue belongs to J. Chester Bushong, Worcester, Massachusetts.

Delays Are Dangerous

WHEN the camerist finds that he has made a specially good picture, novel and attractive, and desires to reserve it for some important purpose, he should not display it too freely, lest some unscrupulous individual steal the idea and forestall him. To copyright the picture he was so fortunate to get, protects the picture, but not necessarily the subject. Many a camerist has cause to regret his lack of foresight—the failure to make the most of an opportunity. It is not enough to conceal the prize from the gaze of the curious, and delay too long in expectation of an opportunity to dispose of it profitably; for the element of novelty of a picture may occur to another observant worker, and then someone may be doomed to disappointment.

As soon as the prize has been secured, it should be copyrighted, then a proper market sought—in a businesslike way and with insistence on a prompt decision. If the picture is intended for a prize-competition, familiarity and compliance with its rules is highly desirable. If it fails to win a prize and the maker has no claim on that particular print, he can probably effect its release if he lays the case properly before the publisher, and most publishers are reasonable. The thing to be emphasized is that, if the picture is valuable because of its thematic originality or pictorial rarity, and there is danger of the idea being duplicated, the camerist should lose no time to dispose of it to the best possible advantage, unless he prefer the pleasure of distributing prints among friends and is indifferent to the ultimate fate of his theme. It is well to remember that motto—"Strike while the iron is hot."

PHOTO-ERA takes this opportunity to extend heartfelt thanks for the many beautiful expressions of cheer and goodwill that it has received from its subscribers and advertisers in America, Europe and Asia, during the last holiday-season. These messages were in the form of personal letters, cards of artistic design and inscribed photographs. In these abnormal times, it is difficult to maintain a high standard of accomplishment, but PHOTO-ERA will do its best.

ADVANCED COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Advanced Competition
367 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P., or black-and-white paper having the same gradations and detail.

3. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value.

Quarterly Miscellaneous Competitions

THESE will continue to be featured in PHOTO-ERA competitions during the year 1918, so as to afford more opportunities to our readers to win official recognition

Awards—Domestic Pets Competition
Closed November 30, 1917

First Prize: H. C. Cowles.
Second Prize: W. E. Potter.
Third Prize: Edwin G. Dunning.
Honorable Mention: W. R. Bradford, Daisie B. Chapell, D. S. Dickinson, A. I. Estep, Chester L. Foster, Carl Hague, Pollux Hein, Franklin I. Jordan, F. W. Kent, F. E. Leland, Mary Marquart, Mrs. S. McFatridge, Holmes I. Mettee, Alexander Murray, E. M. Pratt, J. G. Pratt, H. B. Rudolph, Robert W. Smith, W. Stelcik, S. Wellwood, Elliott H. Wendell.

Subjects for Competition — 1917

"Domestic Pets." Closed November 30.
"Flashlights." Closed December 31.

1918

"The Spirit of Christmas." Closes January 31.
"Still-Life." Closes February 28.
"The Spirit of Winter." Closes March 31.
"Rainy-Day Pictures." Closes April 30.
"Miscellaneous." Closes May 31.
"The Spirit of Spring." Closes June 30.
"Landscapes with Figures." Closes July 31.
"Shore-Scenes." Closes August 31.
"The Spirit of Summer." Closes September 30.
"Vacation-Pictures." Closes October 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup, of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

To Participants in Photo-Era Contests

ACCORDING to Rule 5, a print that receives a prize or Honorable Mention becomes the property of PHOTO-ERA MAGAZINE. However, this does not prevent the photographer from disposing of other prints from such negatives after he shall have received official recognition. The matter has been treated editorially in April and August 1917 PHOTO-ERAS.

Certificates, on parchment, signed by the Publisher, and suitable for framing, will be sent on request, and free of charge, to winners of prizes or Honorable Mention in PHOTO-ERA competitions.

FIRST PRIZE
DOMESTIC PETS

HER PET — H. C. COWLES

The Spirit of Winter—Advanced Competition Closes March 31, 1918

THERE is a peculiar fascination about the attempt to master a known difficulty—particularly, if that difficulty be one that is avoided studiously by one's friends. At this season of the year, the northern parts of the United States and Canada are often bitterly cold and the camerist must love his warm hearthstone less and his art more in order to make a success of winter-photography. While his family and friends gather about the blazing logs, he must bundle up, shoulder his photo-equipment and tramp miles across the snow. This is the heroic phase of the matter. A more conservative and more truthful version would be to say, that while his family and friends gather about their respective steam-radiators, he takes a brisk walk down the street or a turn in the park; makes two or three pictures, then returns to his home.

Be that as it may, the fascination of winter-photography is due to the physical difficulties added to those of a technical nature. The adjustment of lens-apertures and shutter-speeds at a temperature of ten or more below zero requires physical courage and photographic experience to a marked degree. For example, those camerists who have with bare hands fitted a ray-screen, set a shutter and regulated the iris-diaphragm at the temperature mentioned, will vouch for my statement—it is photography raised to its *nth* power of difficulty.

Despite all this, the Spirit of Winter cannot be denied, and camerists, the world over, seek to preserve for all time the grandeur and beauties of snow and ice, afield and at home. Diametrically the antithesis of summer, winter nevertheless is associated intimately with our summer-activities. Familiar landscapes and associations appear so different in winter that they virtually present an entirely new world to conquer—photographically. The brook in summer, and the brook in winter, is of perennial interest by its very study in contrast. Witness our careful comparisons of pictures made by daylight and the same subjects made by moonlight. The principal objects remain the same, to be sure; but what an interesting change in minor details!

The Spirit of Winter can be expressed photographically despite the technical difficulties involved. We instinctively associate this spirit with snow, ice, the bluish-green of the evergreens and the frozen brook. However, winter reaches the city as well; and a shivering, poorly-clad bit of humanity huddled into a doorway is likewise an evidence—and an unhappy one—of win-

ter. The struggles of steaming horses to maintain a footing on the icy streets is also worthy of note, and the birds, whose food lies deep under the snow, should not be forgotten. Of course, there are the happy children with their sleds, the ice-skaters, skiers, tobogganists, rollicking sleigh-parties and snow-shoers to tax the camerist's ingenuity along happier and, no doubt, more congenial lines of effort. However, the aim of the photographer should be to express *his* interpretation of the Spirit of Winter, no matter how, where or when found. Here, again—as in all PHOTO-ERA competitions—originality counts.

To photograph falling snow was deemed at one time virtually impossible; but now in favorable circumstances, and with the requisite technical knowledge, excellent snow-storm pictures may be made. In this connection, I refer to PHOTO-ERA, of June, 1917, which contained a remarkable snowstorm-picture, "Winter's Reign," by W. R. Bradford. An article well worth re-reading is "Stormy-Weather Photography," by Charles S. Olcott, which appeared in our February, 1917, issue. The very attempt to make winter-pictures under storm-conditions is exhilarating and not without its reward. Even as in mountain-photography, winter-photography tries one's skill to the uttermost; but when success is achieved, the pleasure is thrice that enjoyed because of a successful snapshot on a quiet summer's day.

Although beautiful pictures may be obtained in the mountains and in the open country, seashore-views should not be overlooked as suitable subjects. Likewise, steamers, vessels and other craft often ice-shrouded—present great pictorial value. Even an ordinary tug-boat, puffing along in ice-laden water on a cold morning down the harbor, has possibilities if skilfully handled. Then again, there are the hovering seagulls ready to dart down for a bit of food, amid the ice-floes. Of course, the absence of snow or ice in marine-views eliminates such pictures from being true winter-scenes; hence they are ineligible in this competition.

Often, interesting bits of winter-activity may be found in and about railroad-yards or stretches of track in the country. There is something fascinating in the great clouds of smoke and steam emitted from an on-rushing locomotive during cold weather. Particularly is the billowing smoke and steam attractive if the sunlight may be made to shine through the wisps of white steam. Needless to say, a suitable background of snow-covered country is essential to make it a true winter-scene. Often, interesting pictures may be obtained of giant locomotives pushing a snowplow into the snow-drifts and again the element of white steam shimmering in the sunlight is worthy of careful attention. However, despite the beautiful effect of sunlight shining through steam, this must be strictly treated as an accessory to the main theme which is to portray the Spirit of Winter and not the steam.

Another subject that is always one of beauty is that of trees in a landscape after a snowstorm—particularly, if the snow is wet. Every bough and twig is outlined in shining whiteness. Since this beauty is usually short-lived, the photographer must be up and doing quickly, for the scene is soon dispelled by the rays of the sun or a brisk little breeze. The same scene by moonlight or even by artificial light may be made a fairyland of delicate tracery and beauty.

No matter what the subject may be, the matter of exposure is of paramount importance. The exposure should be short; but not so short that tree-trunks or other objects appear as dead black and the snow "whitewash." A shorter shutter-speed or a smaller stop should be employed to obtain the correct exposure. The old, but reliable rule, "Expose for the shadows" is still very much in force.

In connection with any form of winter-photography, great care must be exercised at all times with regard to the effect that intense cold may have on the lens and also the shutter. To enter a warm room from out-of-doors during cold weather will usually cause the glasses of the lens to "steam up," just as eye-glasses do. Unless this is watched very carefully, a highly polished anastigmat lens may be injured badly—if not actually ruined. In the circumstances, it is best to leave one's photo-equipment in the vestibule or hallway for a few moments, so that the transition from the cold outside air to the warmth of the house will not cause moisture to gather on the lens-surfaces. Many so-called valve-shutters are affected by the cold. Even the best of them are apt to play pranks when the thermometer is ten or more below zero. Most of them will not fail to function properly; but the various speeds may show a wide divergence from the speeds marked on the shutter speed-table. Those camerists who have had no experience, will do well to note carefully every time the shutter shows a tendency to diverge from the standard and then govern the exposure accordingly. Even focal-plane and gear-action shutters have been known to be influenced by the cold to a greater or lesser extent. A precaution well worth the trouble to take is to provide a woolen or flannel bag or jacket to accommodate the camera and lens; this in turn should fit into the usual carrying-case. The camera will work to better advantage just as a horse that is protected from the cold will show better spirit.

With regard to development, the aim should be to obtain a fairly thin negative so that detail in the snow may be had without over-printing the darker masses of the picture. No landscape lends itself to monochrome as well as a winter-landscape. It is a mistake to portray snow-scenes in sepia; even blue-print paper is better suited to such subjects. The many excellent developing-papers, now on the market, enable the camerist to obtain effects that are beautiful and true to the life. Though rough papers may be suited to exhibition-purposes they should not be used for competitions—matte is preferred.

Shadows play an important part in winter-landscapes and they add immeasurably to the attractiveness of the composition. With careful attention to the exposure, the shadows may be made luminous and extremely delicate—due, in part, to the advantages of a snow-covered background. To obtain the best effects, the camerist should endeavor to make his snow-pictures early or late in the day, as it is then that the shadows lengthen across the snow.

It is virtually impossible to point out all the many winter-subjects that if properly handled would make excellent pictures embodying the Spirit of Winter. It is not my intention to keep harping on the need of originality; but the fact remains that it appears to be a difficult matter for participants in these interesting competitions to get away from the old conventional themes. It must also be emphasized that originality must likewise include sound technical skill. Slip-shod methods, no matter how original, will not find favor with the judges. It is possible to make a picture that is original in treatment, excellent in technique and of permanent value to professional and amateur photographers. We *know* that it can be done, because it *has been done* by many of our friends in competitions of the past.

A. H. B.

XUM

THE SONG OF A BIRD — W. E. POTTER

SECOND PRIZE—DOMESTIC PETS

Unequal Drying of Negatives

SETTING negatives aside to dry over night in damp cold weather is a dangerous procedure unless atmospheric conditions are maintained until the negatives are thoroughly dry. If negatives are not thoroughly dry next morning any attempt to hasten drying will leave a mark that no after treatment will remove. Different rates of drying produce a considerable difference in density and the safe plan is to dry negatives quickly with a fan or place them in a warm room where they will be sure to dry over night. They should be placed where it is warm before they begin to dry and should be spaced at least an inch apart in the drying racks. Surplus moisture on both the film and glass sides of the negatives should be removed before they are set aside to dry. The considerable increase in density helps to intensify negatives.

Washing Small Roll-film Negatives

R. M. F. in *The Amateur Photographer* says that one of the best ways to wash a strip of small roll-film negatives of the kind produced by the Ensignette or vest-pocket Kodak is as follows: Wind the film-emulsioned side outwards, spiral fashion around a smooth white jam-pot, attaching the two ends with rubber bands. The whole is then placed in the washing-vessel. This method offers one or two advantages over the usual method of placing the film in a bowl of water, when there is a tendency for the film to coil up, and when this is the case the water does not always get free and uninterrupted access to the hypo-laden emulsion. Further, there is not the risk of the negatives being scratched by the rough ends of the film, and, lastly, it is an undoubted advantage for the film to be placed in such a position that handling in any case may be avoided, and risk of frilling thus prevented.

Scratches on Film-Negatives

NEARLY every camerist has been troubled by scratches on his films and J. R. B. in *The Amateur Photographer* indicates how to obviate the difficulty. Workers who use roll-film and develop by hand in a dish are often worried by longitudinal scratches on their films. These may be due to the rollers in the camera over which the film runs. These rollers should be kept clean. But the most common cause is the use of too little developing-solution, the depth of solution being so small that if immersed the film is in danger of rubbing along the bottom of the dish. Any unevenness of the dish or dirt will at once cause a scratch. For this reason, a small deep dish is to be preferred to a larger shallow one. Film-users should remember that the film is equally sensitive to abrasion on either side, and so requires great care in manipulation.

Safelight in the Darkroom

THE idea that additional safety is obtained in a darkroom by covering the walls and ceiling with a non-actinic color is an old one, and one that is very persistent. A little thought should, however, be enough to show any one that the color of the walls makes no difference, whatever, if the light is safe.

Therefore, if a reliable light is available we may just as well have the walls and ceiling as white as possible, and reap the benefit of as much light as possible reflected about the room and in the corners.

Assuming that the light is not quite safe, the colored walls may have an advantage; but, in fact, it is more a theoretical than a practical one, for the light is so enfeebled by reflections that it is likely to be rendered comparatively safe even if the reflecting surface is white or otherwise light in color.

We know one darkroom in which excellent work is

"HULLO!" EDWIN G. DUNNING

THIRD PRIZE—DOMESTIC PETS

done with an extremely unsafe light; but the light itself is not seen, only its reflection from a white wall.

It should be remembered that many darkroom lamps are unsafe, not because the light filter is of the wrong color or inefficient but simply because the light used is too bright. A rather bright light, well diffused and softened by reflection, may be just as safe as a dull light which, on account of its dimness, has to be used at close quarters; but of the two arrangements the former is distinctly preferable.—*British Journal of Photography.*

Washing Enlargements

THE washing of enlargements is always very important and C. R. D. in *The Amateur Photographer* offers some excellent advice. The dish method of washing is quite suitable where one or two prints are concerned; but when the matter evolves into, let us say, half a dozen whole-plate or 8 by 10 enlargements on a cold winter-night, the conditions require a little consideration. A good way effectively to free the emulsion and the paper of hypo is the following. A large piece of common wood is obtained, about three or four feet long, and about twelve inches wide; smaller widths joined together will do quite well. Along the sides two small strips are nailed to form rails. The bottom of the trough is covered with an odd piece of lino or American waterproof cloth. Failing these, it can be coated with shellac varnish. The prints are taken from the fixing-bath and pinned in position, one above the other, the board placed underneath the tap, sloping upwards from the ground, and a good stream of water allowed to sluice over the enlargements. After about thirty minutes of this they are turned over, repinned in position, and again washed for thirty minutes. This is very effective to get rid quickly of hypo from the paper.

Lighting by the Flash

COMPARATIVELY few flashlight-portraits are quite satisfactory from the point of view of lighting, a fact which, we believe, is due largely to a lack of study of the conditions involved in this class of work. Most operators regard the flashlight as a makeshift only to be used in emergencies, and therefore do not trouble to learn how to make the best use of it. As a matter of fact it is possible, even easy, to make flashlight pictures which will hold their own when placed beside those made by daylight or elaborate electric-light installations. One or two points to be observed in starting on this class of work are these: the naked flash should never be allowed to fall upon the sitter. No sane man expects to get a softly modeled portrait in direct sunlight, and an unscreened flash is far more concentrated than sunlight. The light should not be placed too low, and should neither be in front of the sitter nor much to one side. The lens should be screened carefully, so that no direct light falls upon any part of the glass, or even upon the inside of the hood. The light should not be too far from the sitter, and the negatives should not be overdeveloped. Because the exposure is so short, most operators are afraid to use a sufficiently thick diffusing medium; but if the flash is free to illuminate the walls and ceiling of the room, the direct light may be considerably reduced without necessitating any undue expenditure of flashpowder. Above all, use freshly mixed flashpowder. The flame of stale powder is yellow, and a much larger quantity is required. Anyone may prove this for himself by using equal and carefully weighed quantities of stale and fresh powders upon the same subject. After being mixed a few weeks, most powders lose something like half of their actinic power.—*British Journal of Photography.*

XUM

THE CRUCIBLE

A MONTHLY DIGEST OF PHOTOGRAPHIC FACTS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by A. H. BEARDSLEY

Pyro-Stained Fingers

THE elimination of pyro-stain from the hands and fingers is a pressing need. A writer—L. C. F. in *The Amateur Photographer*—offers some excellent suggestions. The difficulty to obtain, and the enhanced cost, of some of the foreign-made developing-agents have had the effect of still further popularizing pyro as a developer, with the natural result of frequent staining of the finger-skin and nails. Prevention being preferable to cure, deserves first attention. If the skin-surface is well rubbed with a water-repelling inert substance the chances of staining are vastly reduced. Such preparations as hazeline-cream, lanoline, or ordinary cold cream are suitable. These are to be well rubbed into the skin for a few minutes, giving especial attention to the edges of the nails, and then any surplus wiped off. Next come stain-restrainers in the developer itself. Of these soda sulphite, potass. metabisulphite, or soda bisulphite deserve special consideration. The mixed developer should not contain less than 20 gr. and preferably 25 gr. of sulphite per ounce, and the others in equivalent proportions. If the normal developer is diluted for any special reason, this should be done with water containing at least 20 gr. of sulphite per ounce. Whenever the fingers are dabbled in *any* staining solution they should be well and frequently dried on a rough towel. As stain-removers the following deserve special attention: (1) Rubbing the part with a slice of a lemon or with citric or tartaric acid; (2) dipping the fingers alternately in a solution of chloride of lime and a one per-cent solution of hydrochloric acid; (3) applying a weak solution of iodine, followed by weak ammonia or hypo-solution; (4) an acidified solution of potass. permanganate, followed by acid-hypo fixing-bath, a solution of meta-bisulphite, or acidified sulphite; (5) a strong solution of ammonium persulphate; (6) rubbing the stains with wet table salt has also been advocated.

A Pyro-Formula for Lantern-Slides

THE following formula, culled from an old lantern-slide expert's notebook, may prove of interest and service to other slide-makers, especially to those with whom pyro finds favor above all other developing-agents:—

Pyro	10 gr.
Pot. bromide	10 gr.
Ammonia .880	10 minims.
Water	to 10 oz.

The Amateur Photographer.

Fixing a Color-Screen

R. F. SEAGER says in *Photography*, "I think that the best place for a color-screen is on the inside of the camera. With many hand-cameras this is impossible, because the camera cannot be opened to insert or remove the screen without fogging the film; and with a stand-camera also, a color-screen inside may limit the extent of rise which can be given to the front. So that most users find it necessary to have the color-screen in front of the lens. When it is placed in that position, it is important to have the screen as close as possible to the front glass, or it may cut off some of the image, or, at least, reduce the illumination at the edges. It is not always realized that if the screen is put in front of the lens, it does not do away with the need of a hood. In fact, as it provides two more reflecting surfaces in the path of the rays, a hood is more than ever necessary. I have constructed a color-screen holder which complies with these conditions. It consists of a flat piece of close-grained cork. Wood might be used if cork is not to be got, but cork is better. In this is cut a circular hole which makes a good fit on the lens-mount when the lens-hood is removed. On the face of the cork is built up a little trough, into which the color-screen can be dropped from the top. The back of the trough is the cork, the bottom and sides are made of thin strips of wood glued on, and the front is a piece of three-ply, with a circular opening the full size of the clear part of the color-screen. On the face of this is a circular cardboard-ring a little larger than the opening, extending forwards about half an inch, and provided with a lens-cap which fits well on it. This ring forms the hood, and it and all the interior surfaces of the fitting are painted carefully with dead-black varnish. The cap is a decided convenience for time exposures, as most of the color-screen holders that I have seen which fit on the hood, do not allow the lens cap to be used."

Playing for Safety

THERE is no more anxious job than that of taking an important group or dinner by flash-light when orders worth perhaps hundreds of pounds and the photographer's professional reputation depend upon the successful exposure of a single plate. Granted that the flash is fired effectively, there is a simple way to remove the single plate risk, and that is to use a second camera, preferably of small size, placed as close as possible to the first one, and to take the two negatives simultaneously, then, in case of any mishap to the large plate, there is a small duplicate which can be enlarged to save the situation. Such a camera need not be an expensive one, and it is worth while to make a special body for the purpose. Most operators have a decent half-plate field-camera, of which the reversing back and front panels with lens can be fitted to a plain box body, so as to be at the infinity-focus when closed, a focusing-flange providing for nearer objects up to five feet. A simple, direct-vision finder is fitted to the top, so that no focusing is needed, and then the whole thing is ready to be placed on any convenient support or even upon the large camera itself. Of course, if one possesses a collapsible camera of the ordinary press-type, it can be used without modification, putting the focal-plane shutter out of action. Remembering that enlargement is in prospect, the photographer should use a fine-grain plate and, as a much larger relative aperture will give equal depth with the large negative, a slower emulsion may be used if desired. If possible, the focal length of the two lenses should be as nearly as possible proportionate—that is, if a 9-inch lens is being used for a 12 x 10, one of 4½ to 5 inches should be used for the half-plate.—*British Journal of Photography.*

BEGINNERS' COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Round Robin Guild Competition
367 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $5.00.
Second Prize: Value $2.50.
Third Prize: Value $1.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is ***"Miscellaneous";*** but only original prints are desired.

Prizes, chosen by the winner, will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books.

Rules

1. This competition is open only to members of the Round Robin Guild. Membership, however, is free to all subscribers; also to regular purchasers of PHOTO-ERA on receipt of their name and address, for registration, and that of their dealer.

2. All Guild members are eligible in this competition provided they never have received a prize from PHOTO-ERA other than in the Beginners' Class. Any one who has received only Honorable Mention in the PHOTO-ERA Advanced Competition still remains eligible in the Round Robin Guild Beginners' Competition; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

3. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P., or black-and-white paper having the same gradations and detail.

4. *Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit being given.

6. *Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

7. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

Awards—Beginners' Competition
Closed November 30, 1917

First Prize: George W. French.
Second Prize: Kenneth D. Smith.
Third Prize: J. S. Burrows.
Honorable Mention: James Allan, C. K. Baker, S. L. Burgher, E. A. Ely, Arthur H. Farrow, T. D. Fields, Gordon Forsyth, G. E. Jacques, Emil H. Kopp, Jr., Louis R. Murray, W. E. Potter, I. C. Sease, Claude Skeels, E. W. Underhill, J. L. Woods.

Why Every Beginner Should Compete

THE trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes, and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered, with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the PHOTO-ERA Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter. After having won a few prizes in the Beginners' Class it is time to enter prints in the PHOTO-ERA Advanced Competition.

As soon as one has been awarded a prize in the PHOTO-ERA Competition, he may consider himself an advanced worker, so far as PHOTO-ERA records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the PHOTO-ERA Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the Publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed to the Guild Editor for criticism will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments, including those of personal counsel and criticism, form an endless chain of advice and assistance if members will connect the links.

Detecting Pinholes

THE discovery of pinholes is vitally important and H. J. R. in *The Amateur Photographer* offers a helpful suggestion. A more convenient method to detect pinholes in a camera-bellows or changing-bag than the one usually adopted is to place a small electric lamp or torch inside and examine the camera, etc., from the outside. The smallest gleam of light issuing from a pinhole can be seen without discomfort if the torch is moved about a little to turn the full beam of light in all directions. When using a large torch with a small camera it is advisable to wrap a focusing-cloth round the open back of the camera. Absolute darkness in the room is not generally essential.

XUM

FIRST PRIZE
BEGINNERS

GUARDIAN OF THE TRYSTING-PLACE GEORGE W. FRENCH

Make a Photographic Inventory

At this season of the year most commercial houses are making an inventory of their assets and liabilities. Goods that do not sell are reduced in price or sold out at a low cash-price to the highest bidder. Lines of merchandize that have proved to be profitable are retained and expanded. Plans are made for the year, and the executives and sales-force are drilled in the best method of procedure. Throughout the organization, there is a definite duty for each member to perform, past failures are relegated to oblivion—all eyes are to the future.

There is such a thing as having too much photo-equipment. By that I mean more trays, graduates, stirring-rods, clips, brushes, etc., than can be used to advantage. Let us suppose that an amateur has an entire equipment with which to develop and print $3\frac{1}{4}$ x $5\frac{1}{2}$ roll-film negatives. For some reason or other he decides to purchase a 5 x 7 plate-camera and discard the $3\frac{1}{4}$ x $5\frac{1}{2}$ size. Rather than set his $3\frac{1}{4}$ x $5\frac{1}{2}$ outfit aside, let him advertise it in the photographic magazines and realize something on his original investment before rust and dust make the $3\frac{1}{4}$ x $5\frac{1}{2}$ outfit unsalable. There are many beginners who would gladly purchase a used developing- and printing-outfit provided it was in perfect condition. A developing-tank that has been taken care of properly is just as desirable after a year's use as a new one. The saving in price to a beginner would mean virtually the difference between having a tank or none.

As I recall my own experience, I realize that my financial losses every time I purchased a new camera amounted to a good many dollars. The point was that I could not afford to own and use *all* the cameras at one time. If I discarded my $2\frac{1}{4}$ x $3\frac{1}{4}$ in favor of a $3\frac{1}{4}$ x $4\frac{1}{4}$, my developing-outfit was put out of commission immediately. Instead of trying to dispose of the $2\frac{1}{4}$ x $3\frac{1}{4}$ outfit when it was in good condition I packed it in a wooden box and left it in the cellar to gather rust and dirt. This procedure I repeated until I had four or five complete outfits in the cellar. Suddenly, it occurred to me to dispose of them; but alas no photo-dealer or even veriest tyro would consider them for a moment. The junk-man finally gave me a few cents for what cost me many dollars. Hence, my plea to make a photographic inventory.

Let us suppose that you have at various times purchased a $2\frac{1}{4}$ x $3\frac{1}{4}$, a $3\frac{1}{4}$ x $5\frac{1}{2}$, a 4 x 5 and at last a 5 x 7 camera. Every time you bought a new camera you purchased one or more printing-frames to fit the new size picture. To-day you use only the 5 x 7 camera,

but you still have many $2\frac{1}{4}$ x $3\frac{1}{4}$, $3\frac{1}{4}$ x $5\frac{1}{2}$ and 4 x 5 negatives on hand. All the printing-frames are in perfect condition. Obviously, the thing to do is to make three masks—$2\frac{1}{4}$ x $3\frac{1}{4}$, $3\frac{1}{4}$ x $5\frac{1}{2}$ and 4 x 5—to fit your 5 x 7 printing-frame and *sell* the rest. Even fifty cents on the dollar is better than a total loss. Moreover, some beginner with a limited photographic appropriation at his disposal will be delighted to obtain cheaply one of your $2\frac{1}{4}$ x $3\frac{1}{4}$ printing-frames for his Brownie.

No one thing has done more to popularize amateur photography than the developing-tank. Whether you use a plate- or roll-film camera, the darkroom has been eliminated as far as the average amateur is concerned. Nevertheless, developing-tanks are not as reasonable in price as developing-trays and for that reason many beginners dabble in an improvised darkroom with but poor success. Much the same relation with regard to size exists between developing-tanks as between printing-frames. A 4 x 5 roll-film developing-tank will accommodate any roll-film whose spool is five inches or under in length. A 4 x 5 plate-tank, by means of manufactured or home-made kits, may be made to accommodate smaller plates. Therefore, true economy would be to sell all developing-tanks whose negatives may be developed by the largest tank. True, the use of a large tank requires more developer; but I am assuming that the largest size camera is the one in constant use and that any smaller films or plates are merely incidental. Some one has said that the man who owns the greatest number of cameras obtains the fewest good pictures. The constant manipulation of one-size camera, developing-tank, printing-frame, etc., has a strong tendency to make an amateur more confident, more technically efficient and a better photographer because—as gunners say—he has the "feel" of his equipment.

This brings up the question of a drastic inventory of cameras, lenses and shutters. Remember, it is not my intention to suggest the elimination of one item of photo-equipment that is *essential* to the work in hand; I refer mainly to duplications, to items of equipment that are efficient but never used and to apparatus that has been superseded by newer or more comprehensive articles used in up-to-date photography. In passing, let me remind all owners of F/4.5 anastigmat lenses of $8\frac{1}{2}$-inch focus and over to prove their patriotism by selling or giving such lenses to the Equipment Division of the Signal Corps, Signal Equipment No. 33, 119 D Street N. E., Washington, D. C. Our country needs such lenses badly—more than you do or ever will. For further particulars read the recent editorials and advertisements in PHOTO-ERA; but, better still, write at once to Washington.

To return to the inventory of cameras, lenses and shutters, the same method of elimination should be applied as was suggested with regard to printing-frames. Whenever a camera is so equipped as to do well all that two other cameras can do, it is actual financial loss to keep it. On the other hand, if each one of those cameras does a specified piece of work better than any other, keep them. This applies to lenses and shutters as well. The entire matter amounts to this: the elimination of non-essentials and the retention of every item of photographic equipment that is rendering maximum service. There is, and always will be, a market for used standard photographic articles no matter what they may be. Even as in the automobile industry, many prefer a used article of standard make to a new one of doubtful manufacture sold too cheaply.

There is another side to this suggestion to make a photographic inventory. To eliminate or return part of your photo-equipment requires an intelligent grasp of present photographic values. To arrive at a clear understanding of these values demands careful study of the latest catalogs issued by the manufacturers of photographic apparatus. In addition, it requires the ability to separate the chaff from the wheat, to determine exactly the equipment that will meet adequately every photographic requirement that you may have now and in the immediate future. If the inventory is carried out systematically, the result will be of great and permanent benefit to every camerist. The educational features alone are worth the effort. The intelligent appraisal of each article that comprises your photo-equipment will result in a more efficient outfit, in your greater technical skill and in infinitely better pictures. Now is the time to make your photographic inventory.

A. H. B.

To Remove Varnish from a Negative

AN easy and safe method to remove varnish from a negative is to place it in a bath of methylated spirits, to which has been added a few minims of ammonia. After the negative has soaked in this for from five to ten minutes it should be transferred to a weak solution of ammonia and water, and then finally washed in clear running water. The work will be greatly facilitated if the negative is rubbed over gently with a small wad of cotton wool at each stage. It is advisable to work the above-mentioned baths in porcelain or vulcanite dishes—not in celluloid ones.—*The Amateur Photographer.*

Obtaining Contrasty Prints from Weak Negatives

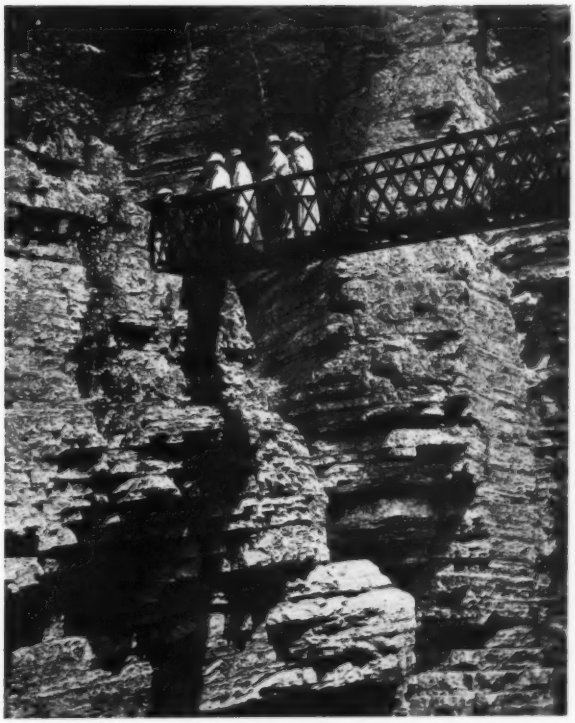
A METHOD to obtain contrasty prints from weak negatives is given by R. M. F. in *The Amateur Photographer.* It is not so commonly known as it should be, that the contrast of bromide prints can be increased very considerably when printing or enlarging from over-thin negatives, by giving the minimum exposure and diluting the developer with twice or three times its bulk of water. The best way to deal with a very thin negative is, however, to enlarge on gas-light paper, and still develop with half the normal strength solution. This plan of diluting the developer is far better than the addition of more bromide, with its incumbent risk of greenish blacks; and, moreover, at the present time, considering the price of the latter salt, is certainly cheaper. A negative that looks almost hopeless may be induced to give quite a passable print when treated as above described, and this should be borne in mind by all who contemplate press-work, when full exposures in weak light cannot be given owing to the movement of the subject.

A Word for the Roll-Film

THIS winter-season doubtless many workers will be tempted to do their photography by the fireside, and in this the film-user, in that he is quite independent of the darkroom finds few, if any, real difficulties to confront him, and therefore he certainly scores over the the exclusive user of plates. Film is especially valuable when indoor-work is being attempted and, quite apart from mere convenience, offers a great advantage in absence of halation, from which the most carefully backed plate is by no means perfectly free. And this should prompt many architectural and other workers to adopt it as the solution of a rather pressing problem.

XUM

SECOND PRIZE
BEGINNERS



NATURE'S HANDIWORK — KENNETH D. SMITH

We were talking the other day to a worker of long standing, and in course of conversation the question of films or plates came up. He amazed us by saying that films never gave results equal to those of dry-plates, a statement which we cannot accept. Years ago it certainly was the case, but the modern roll-film has overcome most of the drawbacks of its predecessors, and exists as a very perfect scientific product. Recently many professionals have been led to make their negatives upon the new Eastman portrait-film, using this in plateholders in the same way as plates, and the advantages that it offers have been most fully appreciated. Film is not coated in the variety and speeds of plates, and we have yet to await the advent of the panchromatic film, but there is much to be said upon the question of uniformity of speed, etc., especially for amateurs. The old advice to get to know a plate and stick to it is undoubtedly sound, and the film user cannot be tempted to depart from this rule; experience will readily teach him exactly what he may and may not reasonably expect from his negative-medium.

The Amateur Photographer.

A Note for Hand-Camera Workers

Some of the more elaborate hand-cameras are fitted with an iris diaphragm which is marked F/8;—the pointer can be pushed beyond this as far as it will go—this will be found to be about F/6. Photographers who use their hand-cameras for "indoor-portraiture" will find that not only does this give ample detail, but often softens or subdues the picture, getting rid of the pin-hole-sharp negative. This also will enable the worker to give shorter exposures.

The Amateur Photographer.

Realistic Figure-Studies

A correspondent in *The Amateur Photographer*—R. M. F.,—regards camera-consciousness as one of the most serious defects that can be found in a figure-study, and one that many workers, even those who are quite expert, find considerable difficulty in conquering, and yet, given a good model this is really a very simple matter. Recently, the present writer was attempting a figure-study, "Gathering Bracken," with his wife as the model. After one or two failures from the cause mentioned above when posing it was decided to take the model actually gathering the bracken. This the model proceeded to do, and the operator followed her movements in a direct-vision view-finder, and snapped just the right position; the result was a splendid picture. It certainly seems, in these days of short-focus and wide-aperture lenses, that the posed figure-study should become a thing of the past, and give place to the real thing, in which the model is actually moving about, doing what he or she is depicted as doing, and doing it naturally.

ANSWERS TO QUERIES

Subscribers and regular readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Correspondence Department, PHOTO-ERA, *367 Boylston Street, Boston, U. S. A. If a personal reply is desired, enclose a self-addressed, stamped envelope.*

W. H.—**Bubbles in the glass will not in any way affect the efficiency of an anastigmat lens.** As a matter of fact, these bubbles indicate beyond the question of a doubt that genuine Jena optical glass was used in making it. By referring to your various lens-catalogs, you will note that it has been found almost impossible to make Jena glass without a few bubbles appearing now and then. In fact, the bubbles are now considered as proof that genuine Jena glass has been used.

W. E.—**The face of a wall clock placed between two windows which face the sky, cannot be seen distinctly unless the observer is standing very near.** At a distance of thirty feet or more, the dial is virtually invisible, owing to the strong light on each side of the clock. A convenient way for you to see it, in these circumstances, would be to form a sort of narrow funnel with your hand. Looking through this improvised tube, you will eliminate the extraneous rays and be able to see the dial quite plainly. This is very similar to halation in photography, which can be reduced in a similar manner, that is, by placing a hood on the front of the lens.

K. C. H.—**An unsymmetrical anastigmat may be used for enlarging-purposes,** but it must be reversed so that the front lens, which, when used on an ordinary camera is towards the distant object, will be towards the bromide paper, whereas the back lens will be towards the negative. On this basis the lens will be employed under conditions similar to normal use in a camera, i.e., object *farthest* from the front lens and plate *nearest* the back lens. If an unsymmetrical lens is used for enlarging-purposes, with the front lens towards the negative in the usual manner, the fine spherical correction will be lost, and even a fair result can be obtained only by the aid of a small stop. The more rapid, the greater will be the defect.

J. A. C.—**A rapid symmetrical lens is a rapid rectilinear** with the front and back combinations of similar construction and of equal focal length.

D.W.D.—**Transferring photographs to watch-dials** can be done by the collodion emulsion or the carbon process. But as this requires considerable technical skill, we recommend that you entrust the work to a reliable expert, such as The O'Hara Waltham Dial Co., Waltham, Mass., who would put the photograph on and make it permanent by baking it. The Carman Art-Company, 79 Dearborn Street, Chicago, do fine work by the carbon transfer process. The cost would be $3.00; the Waltham firm's charge, about $9.00.

Y. W. J.—**To ensure good cloud-effects in general landscape-work,** you need both an orthochromatic plate and a color-screen; one alone is not sufficient. Since you appear to prefer Seed plates, use Seed Orthochromatic, which are the same speed as the Seed 26x you now employ. Ordinary landscape-work does not require a screen so deep as your 10-time screen. A three- or four-time screen would be ample unless absolute color-rendering is a consideration, as in the photographing of furniture, paintings and similar commercial work. Try a Burke & James 3-time screen.

HIS PET — J. S. BURROWS

THIRD PRIZE—BEGINNERS' COMPETITION

L. M. E.—**Making pictures from an airplane** requires both nerve and unusual technical ability. The exposures must be very short because of the great speed at which the airplane travels and the veritable flood of light radiating in all directions. At a greater height than about four thousand feet, satisfactory pictures are almost unobtainable, as the particles of water and dust suspended in the atmosphere affect the definition of the picture. A two- or three-time screen is of great importance; and at great altitudes, where the blue of the sky is intense, a six-time screen will produce the best negative.

G. F. T.—**An aplanat lens** is one which is capable of good definition at a large aperture, because chromatic and spherical aberrations have been sufficiently corrected. The name is generally applied to lenses of the rapid rectilinear type; the aplanat is not an anastigmat lens. This should be remembered.

J. K.—**In answer to the question about developing plates with a warm developer,** it stands to reason that the temperature much higher than 75° will invariably melt the emulsion, so that it will run off the plate or film.

By referring to the "Dictionary of Photography," by E. J. Wall or to "Cassell's Cyclopedia of Photography," you will find formulæ which are specially designed to give the effect you desire, *i.e.*, certain ingredients are lessened in force so as to give others a chance to do more work, and the resulting action is one of softness instead of contrast. Then again, the effect you wish can often be obtained by the correct use of printing medium in the various grades of paper on the market.

B. M. E.—**In connection with a 5 x 7 camera, for home-portraiture,** we should advise a lens of moderate local length, because most home-portraits are made in confined situations. A ten-inch lens would be the best for your purpose with regard to correct perspective and general portrait-requirements.

PRINT-CRITICISM

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Correspondence Department, PHOTO-ERA, *367 Boylston Street, Boston, U. S. A. Prints must bear the maker's name and address, and be accompanied by a letter, sent separately, giving full particulars of date, light, stop used, exposure, developer and printing-process.*

R. A. W. —Your picture is very interesting and a promising subject. Unfortunately, the figure is not sufficiently emphasized. It is almost lost in the setting. Besides, the picture is divided into two nearly equal sections—the foreground and the distant woods. It would have been better if the former or the latter had been trimmed so as to yield an unequal division of the picture-area, thus creating one dominating point of interest.

M. A. —Your picture, "After the Snow-Fall," is very attractive, except that it has too few planes and, therefore, lacks depth and perspective. This somewhat flat and uninteresting appearance of your picture might have been obviated by the use of a large diaphragm and judicious focusing. There is no fault with the subject except with its management and treatment.

K. D. S.—In your vacation-picture your figures, already wide apart, are altogether too large, and the right-hand figure is just about to move out of the picture entirely. This feature is absolutely against good taste in pictorial composition. Your idea would have been carried out successfully had you moved farther back, contracting the distance between the girl with the camera and the object, and had turned the latter *towards* instead of *away* from the girl camerist. In other respects—definition, depth of focus, picture-balance, lighting and tone-values—the picture is very admirable.

R. C.—Your portrait of a young woman, of serious expression, but lips parted displaying upper row of teeth, suggests either adenoids or catarrh. The mouth is shaped so that it can be closed with ease. The fault seems to be yours in imparting an inane expression to what appears to be a comely woman. You asked for a frank opinion; here it is.

E. H. K.—"Springtime-Path" is marred by a large group of tree-trunks at the right, placed conspicuously in the foreground. If trimmed away, it would leave an attractive picture of a road leading into the woods and disappearing there.

J. A.—Your "Mystery of Winter" does not appear to have more than a personal interest. The two masses of ice-covered branches, nearly the same size, side by side, create a theme of divided interest, so that the beholder does not know which of the two masses he is to admire more. The composition is not very successful, although the tonal effect is good.

A. J. J.—The little girl, interested in a picture-book that lies on the table before her, is unfortunate in that her face is too near the book, which would prove to be a very early ocular defect or a bit of carelessness that would soon cause one. The arrangement of the child at the table is likewise unfortunate, as the right arm, sleeve and dress merge into one. Besides, the child moved during the exposure, leaving the chair behind her quite sharply defined and unduly conspicuous. The book, too, is out of proportion to the rest. This is a very familiar theme, but not very well executed. Make another attempt.

I. C. S.—Your picture, "Fluted Columns," suffers by being overexposed, unless the film or the paper has been fogged. The effect is flat and monotonous, quite out of keeping with a building so near and so conspicuous.

M. M. E.—Your portrait of a child with bare legs, facing the camera, is marred by distortion, the limbs appearing as twice normal size. This could have been avoided by using a lens of longer focus, which latter should be about twice the diagonal of the plate or film used.

G. F.—The trouble with your open-air orchestra is that the trees forming the immediate background are as numerous as the members of the band. There appears to be one tree for each musician. The background is "very busy" with its many scattered trees. It is difficult to distinguish the members of the orchestra from the trees behind them, and the lighting is somewhat flat and monotonous. All the musicians are gazing into the camera, except one—in the foreground. Is this fair?

F. G.—"The Mountain Road" suffers by having the end of the road appear exactly in the middle of the picture, this focusing-point dividing the picture in two equal parts—two separate pictures. You can either cut off a large portion at the top and have an attractive road-view, or cut off a portion of the road and have a still more attractive picture. Technically, the picture is excellent.

A. S. U.—Your portrait, "Constance," is a highly creditable composition; but it lacks true color-values. The complexion of the child's face, neck, hands and arms is consistently correct, but the dress is obtrusively inharmonious on account of its extreme whiteness. The book is also extremely white and without character, as it does not suggest either a printed or a pictured page. The child should have worn a medium-light costume, stockings as well, and the book should have contained pages of paper not extremely white, and lighted so as to not offend by its obtrusiveness. A child dressed in white is in itself, an apparition of loveliness. It could be treated by a painter so that the face would dominate even the white dress; but in photography the thing cannot be done so satisfactorily.

K. H. E.—Your vista of the river, with the nearer shore forming the background, would be better were it not for the almost blank sky, which, if filled with clouds, would have saved the picture from being dull and uninteresting. As a subject, this view of the river, with the receding shores and beautiful trees forming the background, is an harmonious theme, and could be greatly improved, as suggested.

J. L. C.—Your view of the Housatonic, with trees in full foliage rising on the opposite side of the stream, and their images reflected in the water below, is very beautiful, except that the direction of the light was not right, in that it falls flatly upon the foliage, causing no shadows. In some cases, the foliage has a woolly appearance, owing, perhaps, to the wind which prevailed at the time of the exposure. By photographing this view again, at a time of the day when the sun is coming from a different direction, you will undoubtedly be able to produce a more artistic result.

J. L. W.—In "The Country-Road" you have a promising subject, but the result appears to be extreme underexposure, for the masses of foliage of the trees, right and left, are intensely black, and the road, itself, is too light in tone to be natural or pleasing. Please try a different time of day, so that the light may throw pleasing shadows across the road, give the proper exposure, and the result will be more pleasing, in every way. These details are essential.

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.

For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.

†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.

‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.

¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

HOUR	MONTH AND WEATHER																			
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1*/12	1*/6	1*/3	2*/3	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1*/5	1*/2	1*	1 1*/2	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–6 P.M.											1*/15	1/8	1*/2	3*/4	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1*/10	1*/5	1*/3	2*/3	1 1*/2

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.

U. S. 1	F/4	× 1/4
U. S. 2	F/5.6	× 1/2
U. S. 2.4	F/6.3	× 5/8
U. S. 3	F/7	× 3/4
U. S. 8	F/11	× 2
U. S. 16	F/16	× 4
U. S. 32	F/22	× 8
U. S. 64	F/32	× 16

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16×4=1/4. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16×1/2=1/32. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Imperial Special Sensitive
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid

Class 1, P. E. 111, Wy. 180, Wa.
American
Ansco Film, N. C.
Atlas Roll-Film
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy
W. & W. Panchromatic

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process
W. & W. Process Panchromatic

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11 Wy. 3, Wa.
Lumière Autochrome

XUM

OUR CONTRIBUTING CRITICS

YOUR CRITICISM IS INVITED

A New Photo-Era Contest

MANY of our pictorial contributors evince so high a degree of intelligence in their criticism of pictures in general that, in order to stimulate and help develop this valuable faculty, we have introduced a new competition. It consists of the reproduction of a photograph lacking good composition. To him who sends us the best criticism, before the twentieth of the current month, we will send, postpaid, a copy of "Pictorial Landscape-Photography," by Paul Lewis Anderson; price, $1.50. In the event of several criticisms (not exceeding three) being satisfactory, they, too, will be awarded copies of the book.

The successful replies, not to exceed one hundred and fifty words, together with the picture criticized, will be published on this page in the second succeeding issue.

The subject of composition in landscape-photography is one that interests every camerist. Naturally, more exposures are made of landscapes than of any other outdoor-subject. The main thing to be remembered is the principle of simplicity and harmony. Mr. Anderson is an eminent exponent of pictorial photography in its highest sense, and he has never appeared to better advantage than the illustrator of his book.

Successful Criticisms

THE figure is not properly placed in the picture-space. To remedy this: trim five-sixteenths of an inch from the left edge and three-eighths of an inch from the top and bend the right arm slightly more, so that the hand may come entirely within the picture-space, or move the entire figure (and flowers, too, for their position could hardly be improved) upward three-eighths of an inch, and to the left five-sixteenths of an inch. I think, however, that the former alteration would result in a more pleasing composition as the nearly straight arm does not harmonize with the reposed expression of the features. When the right hand is brought into the space, the interest becomes well balanced between the face and the right hand upon which the eyes of the subject are directed. Then there is the matter of tone. The face, as the center of interest, should be lighter, and the tone of the dress and flowers should be considerably lowered. I. C. SEASE.

THE PICTURE CRITICIZED THIS MONTH

My judgment is that the figure is too low in the picture-space, also too near for focal length of lens, which distorts the right arm and shoulder. The young lady's interest is out of the picture, and she appears only to be posing. The spotted effect of the blossoms is struggling for supremacy. The limb of the tree forms a duplicate line with the arm, which causes the eye to go out at the right margin. Tonal quality is good with excellent flesh-texture. If the camera had been set farther back and swung slightly to the right, it would block the eye from going out at the back of subject and also bring the right hand into the picture. Placing the figure nearer the top lends dignity. The blossoms at back of neck and on hat have no support and should be blocked out, with a modification of limb and other blossoms to relieve confusion.

M. N. Bremon.

A case of too much trimming, or an attempt to include too much in small compass. This (otherwise) charming picture is absolutely spoiled by the truncation of the lower portion and the amputation of the right hand. There is also some distortion of the right shoulder due to its nearness to the camera. (Did the Editor cut down a larger picture to test our powers of criticism?) Add one-quarter inch to the left, one-half inch to the right, and two inches to the bottom, making the photograph $4\frac{1}{4}$ x $6\frac{1}{2}$ in size, and we should then feel at liberty to admire the soft, delicate gradations, and fine values in flesh-tones and white dress. The line of the bough is well placed directing attention to the pleasing face of the model. Ungloved hands would seem more in keeping with the theme.

Alice F. Foster.

The picture was halftoned exactly as received from the contributor, as is our custom with all prints sent to this competition. [Editor.]

My first impression is that the girl is better looking than the picture represents her. The branches appear to be sticking into her. Head, face and neck are much too dark for so apparently bright a day. Sleeve and arm too big. She hasn't the slightest appearance of action—as if she were reaching forward for something; but has a very *reposeful* look as if both heels (and low ones, at that) were planted firmly on the ground, while she steadied herself to have her picture made. She has a *too big* look as we often see in the pictures of babies and small children. The upper background, to be so indistinct, would have to be quite a distance from the figure in front; but in the picture it appears close on, or rather as if it were only meaningless spots on the paper. The blossoms have apparently no connection, seen or suggested, with the jet-black branch which should not photograph jet-black unless wet.

William H. Blacar.

OUR ILLUSTRATIONS

WILFRED A. FRENCH

In a simple but sincere manner, the Editor does homage to the memory of Abraham Lincoln by reproducing, on the front cover and on the page facing the letter-press, Mr. Bushong's photograph of the bust of O'Connor's statue of the great president. Although in profile, the face expresses the well-known qualities of heart and mind—qualities that endeared Abraham Lincoln to his country and to humanity at large. This statue by O'Connor is of special interest, as was mentioned editorially in the preceding and in the current issues of this magazine. The photograph by J. Chester Bushong, a professional worker, of Worcester, Massachusetts, is excellent, the lighting tending to accentuate the rugged character of the man as expressed in the sculptor's clay model. Data: In sculptor's studio, Paxton, Mass.; 8 x 10 Century camera; 14-inch Heliar; at full opening; December, night; 40-watt tungsten lamp; 4 minutes; 8 x 10 Seed 30; pyro; contact Artura print.

The pictures that illustrate Mr. Waugh's article, pages 59 to 63, show the maker to have expert technical ability. The only data available will be found in the text.

The famous Greek temple at Pæstum, Italy, has been pictured faithfully and artistically by G. R. Ballance, on page 65. The tone-values, being correct, suggest the warm gray tone of the ancient structure, harmonizing with which is the interesting sky overhead. With no data available, it is safe to state that, in this instance, Mr. Ballance used his favorite equipment and method, viz., 8¼-inch Goerz Dagor, 6-time color-screen, timed exposure, slow Iso plate, pyro-soda developer and Platinotype paper.

A happier and better group-portrait—a young boy and his pet dog, as gladdens page 66—would be difficult to find. The excellent technique keeps pace with the vade mecum expression of the young man's canine friend. The horizontal lines of the steps, which generally are objectionable in out-door portraits, do not assert themselves too strongly here. Data: bright day, September, 1917; 3A F. P. K.; anastigmat lens; snap-exposure; contact Azo print.

The pictures that illustrate Mr. Gross' article were made about 10 A.M.; on a clear day in October; 4 x 5 Seed 27; regular M. Q. developer; 4 x 5 Montauk camera; 6-inch Isostigmar; 1/25 second; print on Cyko Glossy Normal.

Myra D. Scales' pastoral, page 72, excels by harmony of grouping and tonal values. The animals appear to be converging towards a point of common interest. They are not scattered about promiscuously, heading in different directions, nor can a single creature be seen to walk out of the picture. For all this the artist deserves much credit, but on account of her present illness, only a part of the data could be obtained, viz., August, 11 A.M.; bright day; 5 x 7 Wizard camera; 15-inch B. & L. R. R. lens.

It is not too much to say that in the "Ghost of the Monarch," page 75, Mr. Laity has produced a winter-scene of exceptional artistic merit, due largely to sound technical knowledge. Underexposure would have made the great tree-trunk a mass of opaque, characterless black and the snow, everywhere, white stretches without gradations or detail. The long, transparent shadow of the tree is the keynote of the composition and owes its integrity to the artist's ability to gauge the length of exposure. There is the feeling that a little more margin at the top would improve the proportions of the picture; but the artist's evident aim was to exclude objects or effects that might tend to divert the beholder's attention from the great shadow on the snow. Data: February; 2.30 P.M.; sunlight; Eastman Vest-Pocket outfit, 1⅝ x 2½; Kodak Anastigmat; stop, F/8; Ansco Film; 1/25 second; M. Q.; direct enlargement on Cyko Enlarging Plat.

Mr. Bryan's "Olaf," with the harmonious setting of a wood-interior, forms a picture of unusual beauty. Page 79. The whole management of the huge dog merits high praise. All the values are delightful in tone and keeping, and the effect of relief imparted to the St. Bernard is realistically superb. Data: Last of August; 4 P.M.; fair light; 3A Folding Camera, 3¼ x 7⅛; B. & L. lens, 6½-inch focus; stop, F/8; 1/25 second; Eastman film; pyro (3-solution Cramer formula); enlargement on Plat. Cyko; M. H. developer.

The portrait of Eugene A. Holton, treasurer of the P. A. of N. E., veteran photographer of Boston and prominent Mason, is regarded as the best picture made at the Providence Convention, last September. Certainly, a finer man's portrait has not appeared in these pages for a long time. The credit for this superb piece of photography belongs to T. E. Halldorson and his firm's home-portrait flashlamp. The characterization and modeling are alike masterful, and this happy result speaks volumes for the artist's ability. Data: 10 x 12 Somerville lens; stop, F/8; 8 grains Victor Extra Fast Flash-powder; E. K. Portrait-film; contact-print on Iris B.

The five pictures that accompany Dr. Maresti's essay, "Water in the Landscape," are illustrative rather than pictorial; and yet the bridge-scenes may be singled out as eminently artistic. The view on page 83 is especially engrossing from a pictorial viewpoint, though some faint clouds would have helped as a bond between the groups of trees and imparted interest to the blank sky.

The river-scene, page 85, is exceedingly effective in its rich dark tones relieved by the pretty arched bridge and its attendant reflections. Data: May 30; 4 P.M.; passing clouds; against the light; No. 6 (5 x 7) Pony Premo; 7½-inch Turner-Reich Anastigmat; at full opening; 1/25 second; 5 x 7 Lumière Blue Label; dianol; contact print on Haloid paper.

Advanced Workers' Competition

In "Her Pet," Dr. Cowles has realized the fullest expression of the subject for competition. There is complete evidence that the beautiful cat, clasped in the arms of its mistress, is a domestic cat. The composition, simple enough in its inception, is remarkably felicitous. The petted animal is rightfully pre-eminent in the group, and its beautiful, intelligent features have been portrayed with extraordinary success. The little girl, though secondary in importance in this charming arrangement, demands her share of

attention, by reason of her quietly expressed affection for her pet, and her sympathetic and pleasing attitude. The lighting of the pair of models is strikingly fine—searching, yet soft and well diffused. Data: November, 1917; Flesh (Victor Medium); Wellington Anti-Screen; pyro in tray; 6½ x 9 cm. Ica Ideal; 9 cm. Hekla, F/6.8; stop, F/11; no color-screen; print on Enlarging Cyko Plat; M. Q.

The trio of kittens, whose attention has been arrested by the song of a bird overhead, forms a very novel and delightful composition. Page 91. Unless photographs of cats or kittens show these creatures in their natural, everyday life, freed of all artifice and attempts to humanize them, they will cease to interest a public that has been entertained unceasingly with pictures of forced or camouflaged intelligence. Trained cats, as part of a vaudeville performance, yes; but poor, suffering creatures posed in the rôles of sick patients, Red Cross nurses, photographers, and the like, no! The thing was done well by Mr. Bullard, twenty years ago, and successfully, too; but his legion of imitators have fallen below his standard of models and adaptations, except in a few isolated cases. Let the poor cat and the public have a rest. Mr. Potter's picture, however, has the appearance of spontaneity, and the little models simply obey one of their natural instincts; that is all. Data: July, between 12 and 1 P.M.; bright sun outside; 3¼ x 4¼ Korona; 6½-inch Turner-Reich Anastigmat; stop, F/6.8; 1/10 second; Polychrome plate; pyro-acetone; P. M. C. Bromide print; hydro-edinol; picture made indoors near west window, with reflector on shadow slide.

Mr. Dunning, a successful home-portrait photographer, seems to have had no difficulty to secure a fine likeness of one of his customer's pets—a lively parrot. These birds have a way of eluding the efforts of the average camerist that is exasperating, and to catch one with its eyes wide open at the instant of exposure, is regarded as a feat. Mr. Dunning succeeded; yet it is a wager that he had his hands full. Perhaps he had no time to shift the cage with the treacherous beast (pet) in order to avoid the objectionable dark wooden bracket overhead, and, possibly, gain desirable space at the left, unless the bird objected to such a plan. Data: November, 3 P.M.; good light; 2¼ x 3¼ Graflex; 5-inch IC Tessar; stop, F/6.3; 1/10 second; Seed Graflex; pyro; print on P. M. C. No. 8.

Beginners' Competition

The trunk of a sturdy beech, its surface covered with the initials of sentimental youths, formed the subject of an interesting theme by Geo. W. French, page 95. By placing his camera within a few feet of the object, the artist obtained an uncommonly striking pictorial effect. Data: Made in Maine, August, 11 A.M.; sun; Ansco Speedex No. 2; pyro; lens at stop F/32; 2 seconds; enlarged on P. M. C. No. 2.

Kenneth D. Smith's picture, page 97, depicts the unique grandeur of Ausable Chasm, N. Y., with striking effect, assisted by bright sunlight. Nothing can be said derogatory to the technical side of Mr. Smith's superb achievement. Data: August, about noon; 3¼ x 5½ Compact Graflex; 7¼-inch B. & L. IC Tessar; stop, F/8; 1/40 second; Ansco Speedex Film; pyro in Eastman tank; enlarged print on Enlarging Cyko Buff.

J. S. Burrows' pretty caprice, page 98, is a typical incident in child-life and is worthy of emulation. The light has been managed with good results as demonstrated in the child's face and its white dress. Data: November, 1917; indoors; bright sunshine through two windows at right and left of subject; 8¼-inch IC Tessar; stop, F/4.5; 1/10 second; Hammer Ortho Non Hal; pyro in tank (plate underexposed); print on Azo E, Hard; developed in Nepera solution.

The picture offered this month to our contributing critics for consideration is "Spring Vista," by H. B. Rudolph. To assist at a better understanding of the composition, the following data are supplied: May, 10 A.M.; cloudy; 7-inch Euryplan lens; stop, F/16; ½ second; Standard Orthonon; hydro-metol in tray; part of negative enlarged on Royal Bromide Rough.

Gold-Toning of Bromides

The application of a gold and sulphocyanide toning-bath, similar to that used for printing-out paper to a black and white bromide print will change the color to a fine blue-black. By applying a similar bath to a bromide print that has been toned brown in the sulphide-toner, the color can be changed through a series of warm browns to red chalk. The print should be placed in this bath dry, and receive a final wash after the desired tone is obtained.—*The Amateur Photographer.*

Corks and Stoppers

W. G. in *The Amateur Photographer* says that there has been a lot written about tying or fastening corks and stoppers to bottles to prevent their being placed on the work-table and thus becoming contaminated by anything on it. Different workers have different ideas, and to my mind the best way is to take the bottle up in one hand, the graduate in the other, and then draw the cork or stopper by hooking the little finger of the other hand round it, pour out what you require, and replace the stopper before you put the bottle back into its place. Of course, two bottles can be handled in the same way when you wish to pour some of the contents of one bottle into another. You would then take up both bottles and draw each cork with the little finger of the other hand. This is a method I have used for many years, and it has now become a habit. I don't claim originality, the idea is an old one, but a good one. Notice a dispenser or an analyst at work and you will be almost sure to see it in operation.

To Improve the Quality of Prints

To enrich matte prints which have been sepia-toned, there is nothing to equal the old polish, "beeswax and turps," says J. R. B. in *The Amateur Photographer.* This is made by dissolving beeswax in small quantities in hot turpentine—an operation that requires care. The quantities required must be found by trial, and should be so adjusted that the product on cooling is of the consistency of thick cream. For use, a little of the polish is taken on a piece of fluffless cloth and rubbed lightly all over the surface of the print and polished in gently till all greasiness has disappeared. Those who have not tried this simple method will be astonished at the marked improvement in quality. This treatment also has a good effect on the life of the print by rendering it impervious to moisture.

ON THE GROUND-GLASS

WILFRED A. FRENCH

A Way to Entertain One's Friends

BUTTRICK is an admirable photographer. He is incapable of making a poor picture. Being gifted with a bump of humor, he showed an album of photographic horrors to a number of acquaintances, at his home, recently. All the while, he preserved a serious, dignified demeanor, allowing his guests to suppose that they were viewing masterpieces of the photographic art. In reality, he had exemplified nearly every mistake or fault common to beginners, as shown in Taylor's well-known book—"Why my Photographs are Bad." There were snapshots of poor innocents with their heads cut off and similarly horrible amputations; double exposures with ludicrous results (a dignified clergyman riding backwards on a billy-goat, lady standing on prostrate figure of a man, and a dog leaping through an open window into the room, etc.); the host reclining in an easy-chair, his feet of gigantic size; portrait of the host with back of chair showing through his body; picture of a lady with two separate heads; a slow snapshot with elongated body of a running dog; a rowboat on a river running violently uphill, and a skyscraper falling over backwards and growing rapidly narrower at the top.

After examining these and other grotesque photographs of physically impossible scenes, and breaking into hearty laughter, the guests finally saw the humorous intent of their host, Mr. Buttrick, who explained that, whereas these pictures actually represented the result of serious efforts by novices who had no previous experience in photography, they had been made by him as suggested by Mr. Taylor's book (instructing beginners how to avoid common mistakes) for the purpose of amusing his friends. Incidentally, there may have been some inexperienced camera-users among his guests, that evening, in which case they doubtless profited from the pictures which had provided so much amusement.

A Photographic Reminiscence

THOSE who have been constant readers of PHOTO-ERA since 1906—and there are many of them—will remember the story of the photo-dealer who lost a large and valuable lens by a clever trick. As the story was widely circulated, dealers were on their guard and no more lenses were lost in this manner.

During the recent Christmas rush, a prosperous-looking amateur entered a well-known New York photo-supply store and asked to see a high-priced reflecting-camera of a certain make. After a protracted examination of the equipment, he made an arrangement with the salesman whereby he was to try it by leaving a deposit of $25.00, his references being considered satisfactory. The next day, about closing-time, he returned the outfit, which was in a heavy, sole-leather case, with the remark that he had been prevented from trying it on account of the extremely cold weather. He did not claim his deposit, saying that he would call for the outfit again, the next day. He did so. It was during the business-rush, when everything was being done in a hurry. The salesman took the camera—one of the 5 x 7 size and quite heavy—got the $25.00 deposit and handed it to the gentleman, who, with profuse thanks, regrets and a cordial "Merry Christmas!" took his departure. The next morning, the salesman—eager to see if the expert amateur had left the mechanism of the camera intact—unstrapped the case, lifted the lid and found several brand-new bricks of very superior quality. The transformation was complete.

Dorotypes and How They Are Made

IT was somewhere in the eighties, that I was making some lantern-slides (portraits of a young lady dressed in the style of her grandmother) when I slightly underexposed several of the plates, which I laid aside. Several days afterwards, as I picked one of these thin positives and placed it upon a sheet of polished brass, I was struck with its similarity to a daguerreotype. Thereupon I procured a piece of the metal, $3\frac{1}{4}$ x 4 inches, bound it to the glass positive, placed them into an old daguerreotype case and passed the result off as the product of the great Frenchman. It deceived many of my friends, but I took care that it was not seen by any old-time photographer lest he discover the trick. I once thought that the idea deserved to be patented; but, as I went to Europe, about that time, the matter was forgotten and the improvised daguerreotype, itself, was lost and never recovered.

These incidents came to my mind, when I was reading about the dorotype—a process originated by I. Buxbaum, the well-known professional photographer of New York—beautiful examples of which were shown at the Providence Convention, in September last. Those who are interested to prepare dorotypes for their own pleasure may follow the directions which Mr. Buxbaum has very generously furnished me:

The negative to be reproduced is placed against a blocked-out window or in a frame, where it can be copied by transmitted light coming, preferably, from the north. By placing the negative with the glass side towards the camera, the finished picture will not appear reversed. The exposure may be made on an ordinary portrait-plate, which is developed in M. Q., regular Artura formula, except that six times as much potassium bromide as given is used. The time of development should be from $1\frac{1}{2}$ to 2 minutes. The plate is then placed in a regular acid fixing-bath, with additional hypo to strengthen it. The plate is then washed thoroughly to remove every trace of hypo, and bleached and redeveloped in the same manner as Royal Bromide paper. A 10 per cent. solution of chrome alum is used to harden the film after redevelopment. It is then washed well and dried. All spots and imperfections may be removed as from a negative. The plate is then backed with paper of any color and surface, or with silk if so desired, and a plate is placed back of it to assure absolute contact of the backing-medium. It may either be framed or placed in a case similar to the old daguerreotype.

Mr. Buxbaum states, further, that the first plate from which he made a successful copy, by this method, happened to be one of his daughter Dorothy, and that her name suggested the designation "dorotype." The fact that some have spelled the name, doretype, is entirely a matter of misunderstanding.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

How About You?

THE time has arrived when every man and woman-photographer must decide whether the United States or Germany comes first. There is not and cannot be a neutral position in this vital matter. Photographers who do not and will not support the U. S. Government in its hour of need must not complain if patriotic photographers who are "doing their bit" call such slackers traitors or worse. We can respect a man or woman who in all sincerity and openly espouses the cause of the enemy; but we cannot respect a man or woman who professes patriotism and who by selfishness and inactivity furthers the cause of the enemy. Where do you as a photographer stand? Are you for or against the United States?

Through every means possible, the Photographic Division of the U. S. Signal Corps has appealed to the amateur and professional photographers of the United States to send in their F/3.5 and F/4.5 anastigmat lenses of 8¼ to 24-inch focal length. It has been stated clearly that these lenses are needed to equip the observation-airplanes soon to be ready for service in France. The need is great and immediate; yet hundreds of photographers are ignoring their patriotic duty to sell their lenses to the government. Perhaps these photographers fail to realize that unless the United States wins this war and does so quickly, photographers may have no use for their lenses, even if they do keep them!

The lenses needed most by the Government are in the hands of professional, commercial and portrait-photographers, who are reluctant to give them up. These photographers must be brought to realize that their Government should not be handicapped by them and that it is their patriotic duty to offer their lenses for use. There are several makes of rapid rectilinear lenses on the market that answer many of the requirements of commercial and portrait-photographers, and this fact has been proven beyond a doubt by well-known photographers who have sold their lenses to the Government.

The division recently asked a photographer in a large city to call a meeting of all professional, commercial and amateur photographers in his city and to explain to them the vital necessity of the Government to obtain high-powered anastigmats of long focal power, and the results in his city were amazing. Therefore, it is suggested that a meeting be called in each city and that the facts be presented clearly to the photographers so that they will be brought to realize their country's need. The Photographic Division will be glad to render all the assistance possible to arrange such meetings.

Many people who own lenses—particularly amateurs—are unfamiliar with the specifications and immediately write the Photographic Division regarding the lenses they have. This causes a flood of correspondence which, at times, almost swamps the office. In order to avoid this, the Photographic Division suggests that whenever a doubt exists regarding the specifications, amateurs should take their lenses to local opticians, photographers or photographic dealers who will test them gladly and offer competent advice.

Be sure to note carefully the immediate requirements which are given here in detail. All makes of foreign lenses are needed, of a working-aperture *of F/3.5 and F/4.5*, with focal lengths of from 8¼ to 24-inch focal length. Remember the local lengths required!

The following are some of the foreign makes wanted: Carl Zeiss Tessars, Bausch & Lomb Zeiss Tessars, Voigtländer Heliar, Euryplan, Cooke, Goerz, Moia, Bush, Ross, Ross-Zeiss, Krauss, Krauss-Zeiss, Steinheil-Isostigmar. In addition, matched pairs of stereoscopic lenses, with speeds of F/4.5, focal lengths of 4½, 5, 5½, 6, 6½ and 7 inches, are needed. Those who have one or more of the lenses specified should write at once to the Equipment Division of the Signal Corps, Signal Equipment No. 33, 119 D Street N. E., Washington, D. C., and state the price. However, when mentioning the price remember that *your* country is in great need and do not try to make a usurer's profit. As a matter of fact, there are photographers who have given their lenses *free of charge* and they are justly proud of it. Let the photographers of the United States step forward at once to *prove* that they stand on the side of right and justice.

Portland (Me.) Camera Club Annual Exhibition

THE Photographic Section of the Portland Society of Art will hold its annual exhibition, this year, as usual. The exhibition will be open to the public March 1, and close April 1. All work to be submitted must reach the Museum not later than February 22. The exhibition will consist of framed pictures, with or without glass. Record-blanks and information may be obtained from the secretary of the Portland Society of Art, Portland, Maine.

Middle-Atlantic States Convention

THE convention of the Photographers' Association of the Middle-Atlantic States will be held in Baltimore, Md., March 19 to 22, inclusive. Headquarters have been established tentatively at the Hotel Rennert. The convention and exhibits are to be at Odd Fellows Hall, located across the street from the hotel. Baltimore photographers are making extensive preparations to entertain. A trip to the celebrated U. S. Naval Academy, at Annapolis, by steamer, followed by a drill by the cadets, is one of the features of the entertainment-program. Those who fear the proverbial March-gales are assured that the climate in Baltimore is ideal at this time of the year. There is every indication that the convention will be a pronounced success.

The Camera-Club of Buenos Aires

MORE and more we are beginning to realize that our South American friends are very much up-to-the-minute. Photographically, The Camera-Club of Buenos Aires, Argentine, is worthy of note. According to reliable information furnished by an old-time resident, its membership is between two and three thousand—composed mostly of well-to-do people. The latest cameras, lenses, shutters and photo-acces-

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sories are employed by the members who appear to consider price no object. All known developing, printing and enlarging-methods are used, and new "fads" are well represented. The club maintains its own wholesale purchasing-department which retails photo-materials to members at cost. Enthusiasm, efficiency and excellent technical and artistic photography combine to make this South American Camera-club a pronounced and permanent success.

Photographic Troubles in England

THE Defence of the Realm Act in England has done much to discourage photography, according to Percy R. Salmon, F. R. P. S., writing in *Harrington's Photographic Journal*. As a matter of fact, things are getting worse instead of better. The heavy fines, which are imposed upon amateur photographers who have infringed unwittingly the Act's regulations, are out of all justice, and are opposed to common sense. The indefatigable R. Child Bayley comments on the fines in rather strong terms in his journal, *Photography*, and it is hoped that his thrusts will go right home. His journal is being read by high officials in a certain Government office. Mr. Bayley rightly says, that to impose a fine of £10 upon a photographer who is clearly shown to have been photographing what he took to be nothing more than an ordinary view, or upon an innocent girl who snap-shotted her sister on a steamer, and to talk about fines of £100 and hard labor for such offences is to bring both the law and the bench into disrepute. The severe fines, etc., were meant for traitors, not innocent photographers.

Heating a Small Darkroom

WE are again indebted to R. M. F. in *The Amateur Photographer* for an extremely timely hint with regard to heating in the darkroom. With the advent of the colder weather the photographer will naturally turn his attention towards darkroom-work, and with this naturally comes the question of personal comfort, and no matter how small or how large the room at his disposal, some form of heating will have to be devised by the worker. In the case of a small room the ordinary heating-stove makes the place too hot, and this led the present writer to devise the following "heater," similar in type to that often employed as an impromptu greenhouse-heater. The requirements are of the simplest order, an ordinary duplex burner oil-lamp, and an 8-inch, a 10-inch, and a 12-inch flower-pot, three good-sized bricks, and a coffee-tin. To use the "heater" proceed as follows: Place the three bricks on the floor in the form of a triangle, then light the lamp, and place it in the middle; over this invert the largest pot, taking care that the flame and the drainage-hole of the pot are in an exact vertical line. Over this again place the next largest, and finally the smallest of the pots. Over the topmost hole place the tin, which should have a V-shaped piece cut out of one side. This is to prevent light from escaping, and when the heater is in use this part should be turned away from the work bench. With a heater of this type any light thus escaping will not be found to do any harm. It is surprising how rapidly a simple piece of apparatus of this description warms a small apartment, though, of course, not powerful enough for a large room, and if lighted an hour or so before work is commenced the operator will find both room and his solutions considerably higher in temperature for its presence. There is not likely to be any trouble arising from fumes, provided that the lamp is kept clean and not turned too high. Also keep well trimmed.

Another Immediate Duty!

Eyes for the Navy

WE all know and realize that the submarine as employed by Germany is one of our greatest obstacles to an efficient and maximum participation in the war. The United States Navy is commissioned to protect transports and merchantmen. Moreover the navy is entrusted to detect and to destroy enemy submarines at sight. To fulfil its duty "our first line of defense" *must be able to see!* The United States Navy is in urgent need of binoculars, spyglasses and telescopes, *now!* The submarine has so changed naval warfare, that every ship needs more "eyes"—more lookouts equipped with efficient glasses with which to keep an unceasing vigil for enemy periscopes. In the past, the United States has been obliged to rely, for the highest forms of optical glass, almost entirely on foreign countries; now these channels of supply are closed, and there is no stock on hand to meet the present emergency. Hence, this appeal to the patriotism of photographers, travelers, lecturers, autoists, yachtsmen, hunters, mountain-climbers, sailors and all sportsmen who own serviceable binoculars, spyglasses or telescopes. The United States Navy requires thousands of these three types of glasses and needs them at once! Sextants and chronometers are also urgently required.

All articles should be tied securely and tagged with the name and address of the donor. They should be forwarded by mail or express to the Honorable Franklin D. Roosevelt, Assistant Secretary of the Navy, care of the Naval Observatory, Washington, D.C., so that their receipt may be acknowledged by him. Articles not suitable for naval use will be returned to the sender. Those accepted will be keyed, so that the name and address of the donor will be recorded permanently at the Navy Department. Every effort will be made to return each article, with historic interest, at the termination of the war. Of course, it is impossible to guarantee them against damage or loss. As the government cannot, under the law, accept services or material without making some payment therefor, one dollar will be paid for each article accepted, which sum will constitute the rental price, or—in the event of loss—the purchase-price, of such article. These conditions should be noted carefully.

Photographers, there are now three paths of duty directly before you; first, enlist in the Photographic Division of the U. S. Signal Corps; second, enlist your F/3.5 and F/4.5 anastigmat lenses; and, third, enlist your binocular, spyglass or telescope as one of the "eyes of the navy"!

Dec. 27, 1917.

Mr. WILFRED A. FRENCH,
EDITOR OF PHOTO-ERA MAGAZINE.

Dear Sir:

I desire to congratulate you at the end of the eleventh successful year as Editor and Publisher of PHOTO-ERA MAGAZINE. I consider the illustrations and general make-up of PHOTO-ERA without equal in the monthly photographic field. I heartily wish PHOTO-ERA all the success it deserves, during the coming year, as in the past, under your inspiring guidance.

Very truly yours,

RODERICK GALLIE,
Secy. L. R. Camera Club.

RECENT PHOTO-PATENTS

Reported by NORMAN T. WHITAKER

THE following patents are reported expressly for the PHOTO-ERA MAGAZINE from the patent law offices of Norman T. Whitaker, 370 Whitaker Building, Washington, D. C., from whom copies of any one of the patents may be obtained by sending fifteen cents in stamps.

Camera invented by Burt A. Brigden and Gustav C. Kehres, of Cleveland, Ohio, patent No. 1,248,607, in which the following is claimed: In a roll-camera having an exposure-opening, the combination with a supply-spool and a spring-actuated winding-spool for the film, said spools being located at opposite sides of the exposure-opening, of a controlling-roll over which the film passes at the opposite side of the exposure-opening from the winding spool, an escapement-device governing the rotation of the controlling roll, and means to operate said escapement-device.

Patent No. 1,249,172 has been invented by Otis L. Mullendore and Olin H. Stevenson, of Roanoke, Ala., on Plateholder-Attachment for Camera-Backs, in which the following is claimed: A plateholder adapter for camera-backs, including, in combination with a ground-glass frame and plateholder, a three-sided open-ended frame fitting accurately within the camera-back, said frame being rabbeted at the inner edges thereof to provide a seat which faces the ground-glass frame and cooperates therewith to hold the plateholder in position, the plateholder being insertable into and removable from position from the side of the camera-back toward which the open end of the adapted frame faces.

Edward N. Millan, of Kansas City, Mo. has invented Photographic Apparatus, patent No. 1,249,291, in which the following is claimed: In a photographic apparatus of the character described, the combination of a movable liquid-bath receptacle, a submerging-device pivoted to move with said receptacle, and means whereby said device is caused to swing into and directly above the receptacle consequent upon movement of the receptacle.

Method of Producing Color Photographs or Films has been invented by Frederick Eugene Ives, of Philadelphia, Pa., patent No. 1,248,864. The patentee claims as follows: The process of making color motion-picture films from red and green selection-negatives reversed with respect to one another, said process comprising the steps of photographically preparing from the respective negatives, monochrome positives respectively of blue-to-green and red colors and carried on suitable transparent carriers, and then assembling and permanently securing said positives face to face in register, with the carriers at the outside.

Patent No. 1,247,402 has been granted to Roy S. Hopkins, Washington, D. C., on Camera-Support, in which the following is claimed: A device for making enlarged photographic prints comprising a camera-support having an adjustable camera carrying device, parallel-spaced arms each pivoted at one end to said support, and provided at their other ends with means for attachment to a supporting base, and cooperating-means on said support and on one of said arms for adjusting the camera-carrying devices to maintain the proper focus.

Light-Filters and Definition

WE have somewhat recently referred to the destruction of definition with large-aperture anastigmats, particularly when these are of considerable focal length, if ordinary light-filters are used on the lens. It has been suggested that much trouble might be saved if those workers who coat selected glass with gelatine and subsequently stain it with a suitable dye would examine the glass for planeity and parallelism in the usual way, and also focus an image with the piece of glass on the lens in the light-filter position. Really poor pieces of glass would, of course, be rejected after such tests, but it is to be remembered that other factors come into play during the manufacture of the filter. There is, for instance, the "pull" of the gelatine-film when it becomes thoroughly dry, and this may be sufficient in extreme cases to rupture the surface of the glass. Such contraction will obviously bend the piece of glass, just as the contraction of a print curls the mount. Again, pressure is sometimes used in cementing the two glasses together, and this pressure may result in the glass being bent over its entire area, and bent irregularly, which is the worst kind of bending possible. These troubles may be avoided to some extent by using thick glass, and by avoiding any pressure but the slightest during cementing. We have used glass $\frac{1}{12}$ of an inch thick to make 3-inch filters, and have simply kept the two glasses in contact while the balsam dried by laying a four-ounce weight on the top. We also avoided any attempt at complete desiccation of the gelatine-film, though that was dried in the ordinary way in a dry room.—*British Journal of Photography.*

Copying by Gaslight

IT is the exception rather than the rule to find a studio without some kind of electric light installation, but there are places, sometimes quite near busy centers, to which current could be brought only at a prohibitive cost, so that the photographer is limited to daylight and gaslight for all purposes. As there is not always time to make copy-negatives for enlargements, miniatures, etc., during the few hours of good daylight during the winter months, it is fortunate that in incandescent gaslight we have a good illuminant for our purpose. For all sizes up to whole-plate ($6\frac{1}{2}$ x $8\frac{1}{2}$ inches) a couple of burners with whitened reflectors will give a sufficiently even lighting; if necessary, these may be moved during exposure. A saving of time and a better color-rendering may be obtained by using an orthochromatic plate, but perfectly good work can be done with ordinary plates. As a rule, a better light is obtained by dispensing with the globe or chimney usually supplied. The burners should be frequently cleaned, and the mantles renewed as soon as they show signs of deterioration. It must always be remembered—in using such comparatively feeble light—that it should be placed as near the original as possible, and that the reflectors should be arranged to secure approximately even illumination.

British Journal of Photography.

LONDON LETTER

CARINE AND WILL CADBY

A SHORT time ago Mr. Richard Speaight, the well-known Society photographer, went to Flanders to take portraits at the command of the King and Queen of the Belgians, and he is now holding a little exhibition of prints of the Belgian Royal Family, at his studio, in New Bond Street.

We heard at the time that the photographs were taken well within sound of the guns; but we did not know till we visited the show that they were taken actually in a barn quite near the first line of trenches. A print shows the place, somewhere in Flanders, and we see the barn. Instead of a rural, it has a severely business-like and military appearance, for it is now used as a garage for service motor cars.

At the beginning of the war, we all became very familiar with King Albert's face. No self-respecting illustrated paper failed to publish a full-page reproduction of one of his latest portraits. They were sure of its popularity, and knew that in most English homes this reproduction would be kept somewhere in evidence if it was not framed and hung on the wall. Nothing in modern history has aroused such a fury of sentiment among the English as the fate of Belgium, and when all doors were open to the Belgian refugees, the portrait of the king was reverenced as a symbol. In a lesser degree we knew the Queen and Prince Leopold by sight, so that it was interesting to meet them again at the present moment.

What we first realized—on seeing their latest portraits—was that the war has gone on a long time and that three such years as these leave their mark on faces. Mr. Speaight is not a purist who despises retouching, but not all his smoothing out of lines can wipe away from King Albert's face the record of these last three years. Out of five portraits of him, one stands out as the most life-like and impressive. He has lost his look of youth. The expression is stern and sad; but there is no hopelessness nor a trace of bitterness. It is a triumph for Mr. Speaight to have got such a portrait, for it seems to show us so much of the man himself and there is not the least photographic look about it. It is an arresting face, and we found ourselves continually returning to it.

The Queen seems to have changed little, but the young Prince Leopold, Duke of Brabant, is no longer the alert looking boy, he is now a soldier in the 12th Regiment of the Belgian Army and is shown to us in his uniform.

There are a few other portraits: the Earl of Athlone, Chief of the British Military Mission attached to the Belgian army; the Military household of the King, etc., but nothing compares in interest to that one fine portrait of King Albert.

Copies of any of the photographs are being sold by Mr. Speaight in aid of the Queen of the Belgians' fund for crêches; but on looking over the list of subscribers we noticed that it is the portrait of the king which is by far the most popular.

It would seem that, during this universal war, a camera is about the most dangerous bit of mechanism to toy with. We have been talking to the captain of a cargo-boat who has just returned from the other side of the Atlantic. Like many of his calling, he is a persistent photographer. On the outward journey the bows of his ship had sustained considerable damage, how it is unnecessary to discuss, and on arriving in a Canadian port he was eager to go ashore and snap-shoot the forepart of the ship as a record for his owners. But a port-authority, who was with him, strongly discouraged the idea, and on being pressed for his reason remarked, "Well, you see, the harbor-guards are young men with new rifles, and naturally very eager to use them, and if you are seen on shore, bobbing about with a camera, the chances are that you may get a bullet through you." And it was only a vest-pocket Kodak that was to be used!

It would be affectation on our part to resist the temptation to chronicle the appearance of a second child's book, written by one, and illustrated by the other of the present writers. "The Dolls' Day" which was reviewed by the Editor, when it was published two years ago, has run into a second large edition, proving incidentally—we think—that children like photographs as illustrations in their books. Its success was the direct cause of the present venture which is called "Finding A Fairy" (Mills & Boon, 2/6 net). There are thirty-two full-page photographic illustrations representing a little girl's ultimately successful search for a fairy, and the story has been written in carefully chosen words well within the reach of the youngest reader. Book-publishing becomes ever more difficult as the war proceeds, and all the materials used are increasingly scarce, and, of course, go up in price as man-power is put more and more to essential purposes. But in spite of this, the photographs have been fairly well reproduced. The negatives were all made on Imperial Non-Filter plates, and care was taken that full exposures were given. Probably, this has something to do with the good reproductions. The binding, a plain green linen with absolutely no ornamentation, is what we, in this country, have come to call a war-time binding, and it is æsthetically a great improvement on the gold lettering and devices of quite meaningless decoration of other times.

Writing of war-time printing, we are reminded that even so popular a story-teller as William J. Locke has his latest novel, "The Red Planet," printed on what appears almost like sugar-wrapping paper; and we presume that there is not much demand for this just now in its legitimate sphere! The publisher, John Lane, inserts a printed slip apologizing for the quality of the paper, and goes on to say:—"It is the only kind of paper that could be obtained at the moment, and has cost over 300 per cent. more than a similar paper would have cost before the war, and 150 per cent. more than the better class of paper on which Mr. Locke's books have hitherto been printed."

Enterprising and alive, as usual, the Camera Club have just had a remarkably interesting exhibition of war-photographs by the Royal Flying Corps. We wished for better trained eyes as we looked at some of the daring results shown us here. One wants to know how to read these prints, for it is a case of "eyes and no eyes." We have heard lately a good deal about the School of Photography that is connected with the R. F. C. Not all who wear its uniform will achieve the wonderful adventure of flying; but their

work is of almost as great importance, for, on accurate and careful developing and printing depend not only the lives of their countrymen, but often success or failure in the fighting-line. This subject is most entertainingly dealt with by Ward Muir in an article entitled "The Camera in the Air" which appeared in the large Aviation number of "Country-Life," recently published. Although the school and its doings may not be described in detail, Mr. Muir gives many interesting particulars as to the work. Quickness and exactness are primary necessities at the front, so these qualities are cultivated carefully. To show the reason of this, Mr. Muir writes:—"A sheaf of specified and numbered enlargements from every aerial reconnaissance-plate is ready at the front an hour after that plate was exposed over the enemy's lines. Our authorities must be able to inform themselves what the other side of No Man's Land looked like—not last week, or yesterday, but to-day."

A thin but technically very beautiful negative is the one aimed at. Every scrap of detail must be coaxed up, and yet, on no account must development be carried a scrap too far. The camera used in airplanes is so automatic that it can be manipulated by airmen quite unused to photography. Not only that, but the pilot can work it by the simple pulling of a lever at the side of the plane, so that no passenger need be carried for the task. Not only aviation will have been immensely stimulated by the war, but aerial photography will have been born and got well beyond its childhood in these stirring times.

Sending Postage-Stamps

MANY things are done wrong because done in haste, and haste makes waste. A postage-stamp, or a strip of stamps, should *not* be attached to the letter by a corner or an edge, because, in being detached, such stamps frequently get injured, and they cannot be used as effectually as new ones. It is a poor compliment to the recipient. If it is too much trouble to enclose stamps in a piece of paraffined paper or in a small envelope, the sender may attach them properly, viz.:

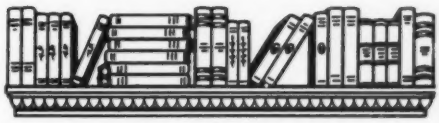
Slightly moisten the center of the stamp, at the back, and then attach it to the letter. The reason for so doing is obvious.

Never—as is done frequently—place the stamps loosely in the envelope, between the letter and the envelope. This is a very careless practice and, unless discovered by the recipient, the stamps may be regarded as not having been received.

A Waterproof Cement

THE most useful cement a photographer can have to join glass to metal, repairing dishes, and for the thousand and one general purposes the use and abuse of apparatus render necessary, is the old Faraday cement. This is composed of four parts of beeswax, one part of resin, and one part of Venetian red—previously dried. These should be melted together carefully in an old saucepan or "skillet," and well stirred while cooling, remelted, and stirred as before. This is to ensure thorough mixing. For use it is melted, and it is advisable, though not absolutely necessary, to heat the articles to be cemented. Faraday cement is as handy as sealing-wax, which it resembles, but is much more tenacious, and though hard, possesses great elasticity, so that it stands wear and tear well.

The Amateur Photographer.



BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

LIGHT AND SHADE—and their Applications. By M Luckiesh. 135 illustrations by photography and 10 tables. 265 pages, including alphabetical index. Large 8vo. Price, cloth, $2.50. New York: D. Van Nostrand Company.

This book fills a long-felt need. It deals with the fundamental principles of light and shade and teaches the student to observe, record and control illumination as applied to the fine arts and to the practice of photography. Each such application is illustrated fully and approximately to meet the practical needs of the art-student as well as of the photographer. The latter, as a rule, lacks a true knowledge of the nature of light-sources and their actual behavior, and his use of light, natural or artificial, is based largely upon imitation, however admirable are the results in many instances. Really intelligent and personally satisfactory work can be accomplished only with the aid of a thorough understanding of the means the artist employs. Therefore the photographer, who depends upon light for the attainment of his results, should know at least the practical character of his sources of illumination. The book by Mr. Luckiesh is divided into fourteen chapters, which deal with the shadow; the scale of values; the influence of color; light and shade in nature, painting, sculpture, architecture, stagecraft, photography, vision and lighting. Surely, this array of subjects, each presented clearly, concisely and attractively by an able physicist, should appeal to every photographer who is eager to excel in his work. The book is printed in large, bold-face type, and with its superb illustrations, invites admiration.

WILD BIRD GUESTS.—How to entertain them. With a Preface by Theodore Roosevelt. By Ernest Harold Baynes. 50 Illustrations from photographs (including many by the author). 326 pages. 8vo. Price, $2.00 net. New York: E. P. Dutton & Co.

Though countless good books have been written on the subject of birds, none has yet appeared that rivals the work by Ernest Harold Baynes. Mr. Baynes is known widely as a lover of animals—an ideal zoölogist, and has spent most of his life studying their habits and making many of them (denizens of New England woods) his companions at his country-home. He has given accounts of his experiences with hairy and feathered creatures, on the lecture-platform, and now appears as author of an exceedingly valuable and interesting book telling how to win their favor. To this end he builds nest-boxes, nest-shelves, baths and drinking-pools; cultivates trees, shrubs and creepers affording hospitality at all seasons throughout the year; organizes bird-clubs with instructions to protect song-birds against their enemies, natural and human, and to know and to care for them; and explains the æsthetic and moral values of the birds. Mr. Baynes appears in the triple rôle of ornithologist, bird-architect and photographer, and eminently successful in each field.

WITH THE TRADE

The Central Dry-Plate Company Moves to Its New Factory

After months of careful preparation, the Central Dry-Plate Company, of St. Louis, now occupies its new factory, at Benavis, on the exact ground of the former M. A. Seed Dry-Plate Company. The new plant covers an area of nearly nine acres, and it is specifically and exclusively designed to manufacture high-grade dryplates. Modern machinery and competent experts are now at work to produce a complete line of photographic dryplates suited to every modern technical requirement. A research-laboratory equipped to the smallest detail, and in charge of photo-scientists will supervise all manufacturing-departments and will keep pace with proved scientific advances. The best wishes of the trade and Photo-Era are extended to the new management.

For Postage-stamp Collectors

The attention of collectors of postage-stamps is directed to the advertisement, in this issue, of George C. Rockfellow. Collectors are offered genuine stamps, of all countries, at cut-prices—much below those in Scott's catalog. In this case, war-prices are favorable to the purchaser. Mr. Rockfellow's supply of stamps is varied, but limited, so that collectors should move quickly in this matter.

English and German Goods

My eye is caught from time to time by the announcement of the intention of certain of your cotemporaries to admit no advertisement from a German firm to their columns, after the war. The self-denial, if cheap, is praiseworthy. But I am a little puzzled, for when I turn to the columns devoted to second-hand apparatus I see that most of the higher-priced goods offered have a German origin. It is clear that photographers are believed to be willing to pay very high prices for lenses by Zeiss, Goerz and other German makers. All of these were purchased, no doubt, before the war; but the prices asked, and presumably paid, do suggest the existence of doubt whether the English optical productions are equal in quality to those of the Germans.

May I suggest a caution? Just now those of us who have German lenses may use them or sell them without suspicion of aid to the enemy. When war is over, however, if we are to be consistent, the bar must be raised, not only against the new German lens, but against that which, although it may be second-hand, will be under suspicion of having been recently purchased. In those circumstances, we are likely to see a very startling drop in the market-value of German photographic apparatus. That should be accentuated, if rumor prove true, by the placing on the market of some of the remarkable productions of which our opticians have shown themselves capable.

Meanwhile, it would be a good thing if we could get it into the language that the best productions of our English opticians are as good as the best of the Germans'. That happens to be a fact, although the reader of some of the popular text-books would have difficulty to believe it. And the way to encourage our opticians to make their lenses, even better than they are, is to resolve to buy them as soon as they are available, and not to be tempted by the slump in prices which will then have overtaken the German productions, both new and second-hand. (A letter addressed, by Alfred H. Watson, to *The Amateur Photographer*, London.)

Increasing the Sale of Photo-Goods

"I wonder how I can increase the sale of my goods," is a question the photo-dealer sometimes asks.

"By increasing the interest in the goods."

"But how shall I go about it?"

"By selling the customer a photographic magazine, such as Photo-Era."

"But why *that* one?"

"Because it stimulates the amateur to make artistic pictures, winning him prizes, fame and profit."

"But he doesn't buy a photo-magazine."

"How can he when you don't offer or display it? Putting the magazines *under* the counter instead of *on* it, does no good."

"If I display them, *then* what?"

"They'll be seen and bought. Else urge the camerist to buy a copy."

"There is no money in it. Is there?"

"Why not? I understand that Photo-Era costs you 14 cents a copy, and sells for 20 cents. Your profit is 30%. If the salesman has the interest of his firm and his own advancement at heart, he'll suggest to his customer that he read an article in the magazines on a subject that interests him specially—say, photography of flowers, animals, children, yachting, mountain-scenery, or whatever might appeal to him."

"Well; what's the use of all this?"

"It serves to stimulate an interest in a new photographic topic and the sale of the necessary material—maybe a new equipment. It also helps to establish friendly relations between the salesman and customer, and tends to prevent the latter from visiting other supply-stores."

"I catch the drift of your argument. I think I'll increase my order for copies of Photo-Era. I'll display and push them. If a man buys a large bill of goods, I'll put in a copy with our compliments, and make him read it. I guess your dope is all right."

An Appreciation

Editor of Photo-Era Magazine.

Dear Mr. French:

It is always a pleasure to us to learn of the high ideals of those with whom we are intimately associated, and in spirit you have our cordial endorsement of the high plane upon which you are conducting your magazine, and your efforts to clarify the trade so far as fraudulent advertisers are concerned.

International Photo-Sales Corp.

Critic: "Do you ever take pictures in the nude?"

Photographer: "Hardly! I usually wear a working-jacket."—*Exchange.*